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# MONTHLY PROGRESS REPORT ★ SECTION

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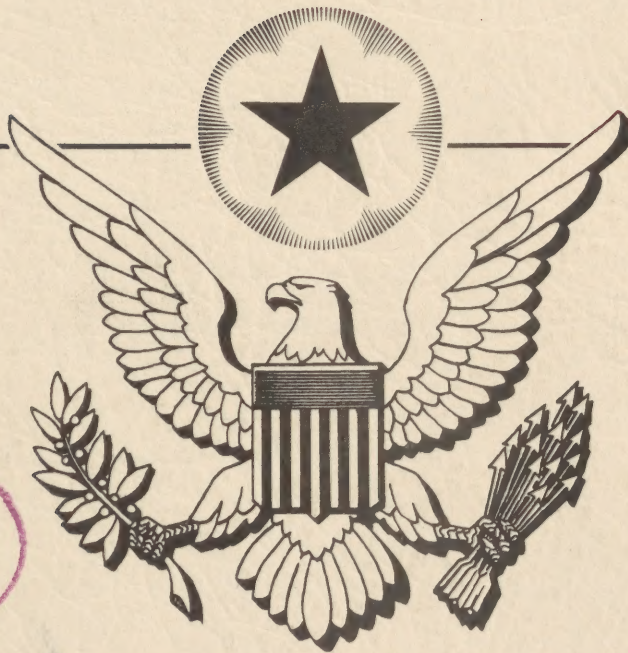
TO: \_\_\_\_\_

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# HEALTH



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# HEALTH

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# DISEASE AND INJURY

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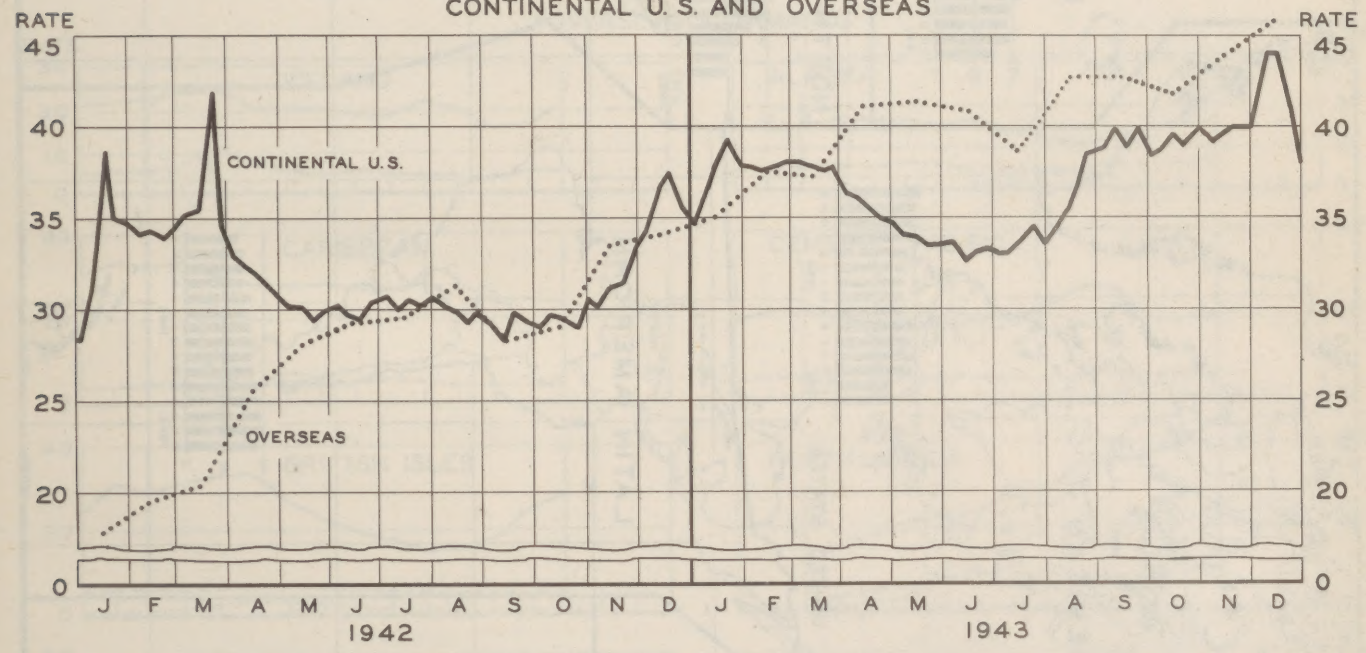
## NONEFFECTIVE RATES, U. S. AND OVERSEAS

The average daily noneffective rate for troops in the U. S. rose with unusual sharpness during the weeks ending 4 and 11 December to achieve a peak of 44 noneffectives per thousand men per day for the two weeks ending 18 December. Although the rise evidently paralleled the brief respiratory epidemic, perhaps part of the equally rapid decline may be attributed to the influence of the holiday season.

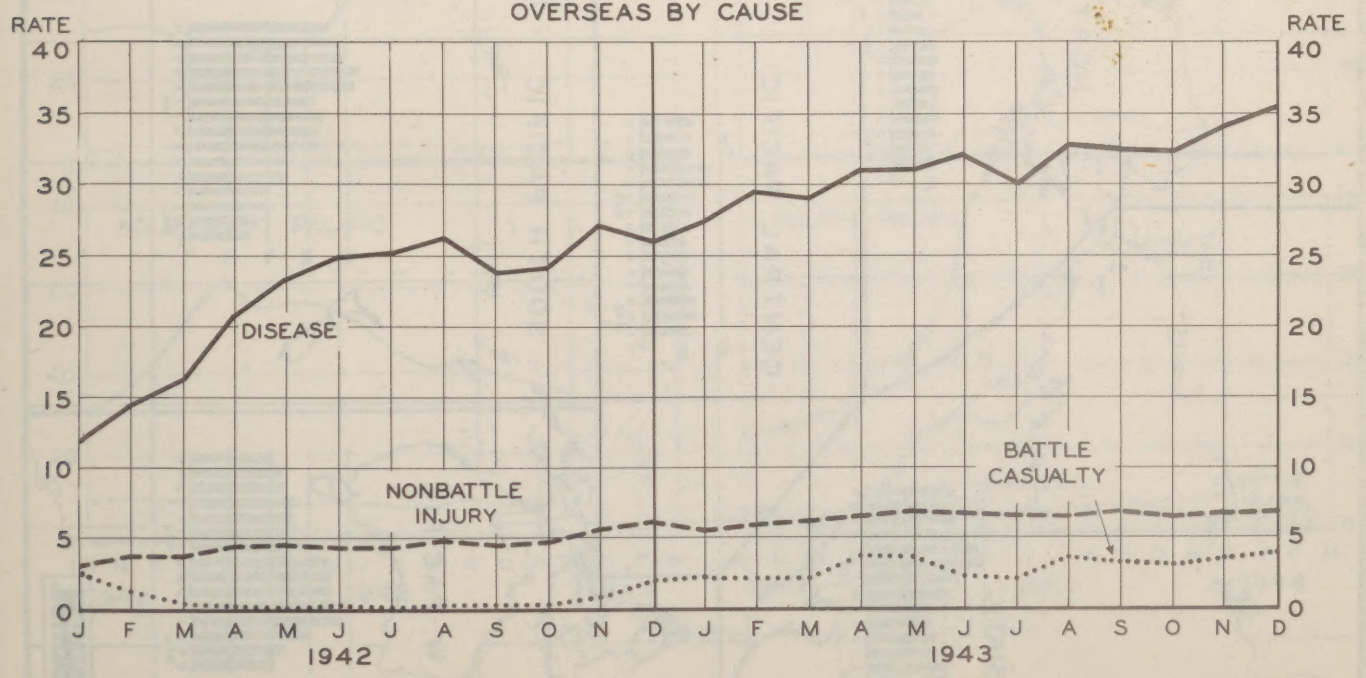
The noneffective rate for overseas troops advanced noticeably during November and December, according to telegraphic reports from the major theaters. The provisional rate of 46 for December is the highest yet recorded for the forces stationed overseas. The bottom panel, giving the components of the overseas noneffective rate, indicates that a rise in the noneffective rate from disease is largely responsible for the increase in the total rate.

### NONEFFECTIVES PER THOUSAND MEN PER DAY

CONTINENTAL U. S. AND OVERSEAS



OVERSEAS BY CAUSE

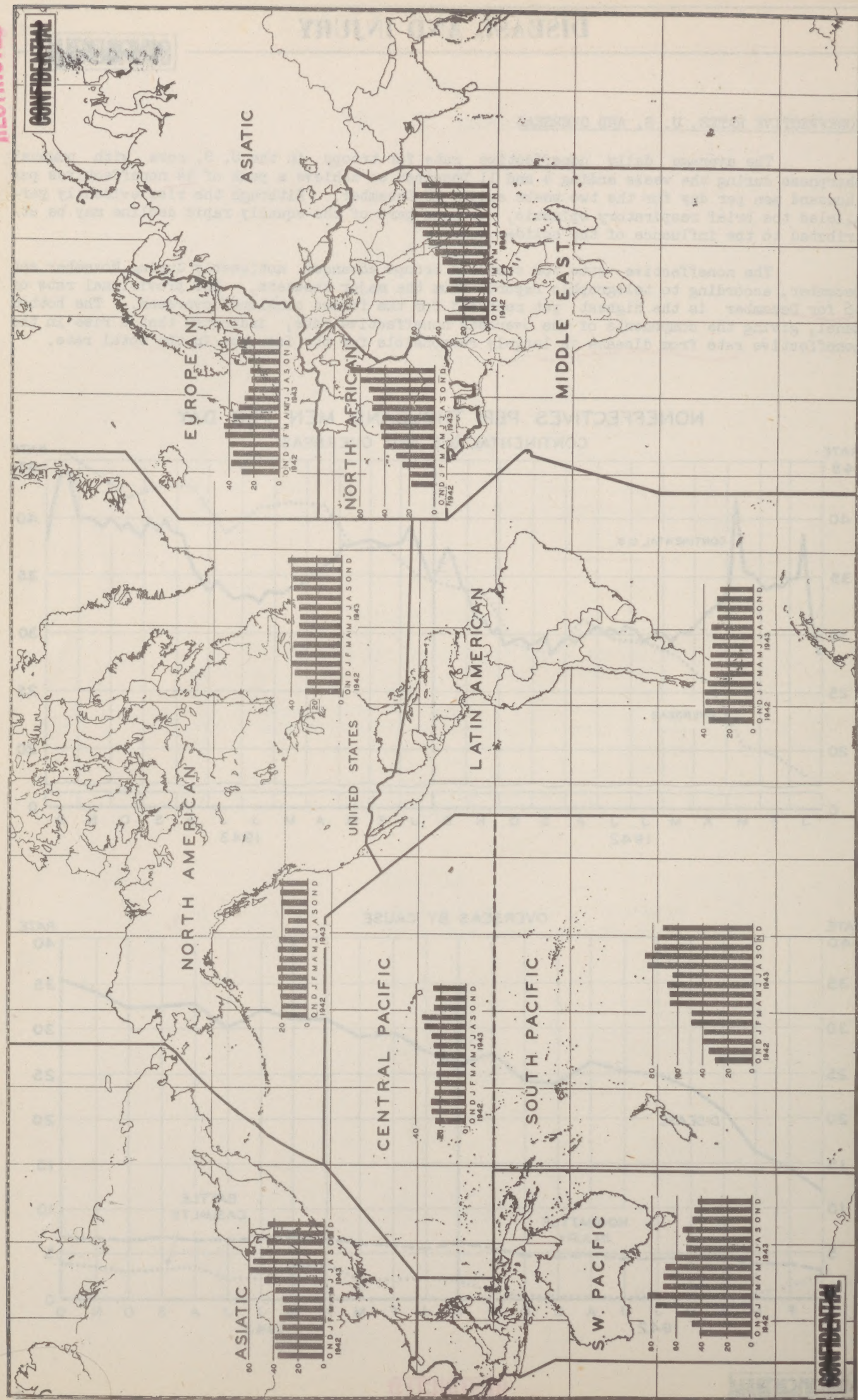


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NONEFFECTIVES PER THOUSAND MEN PER DAY

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# DISEASE AND INJURY

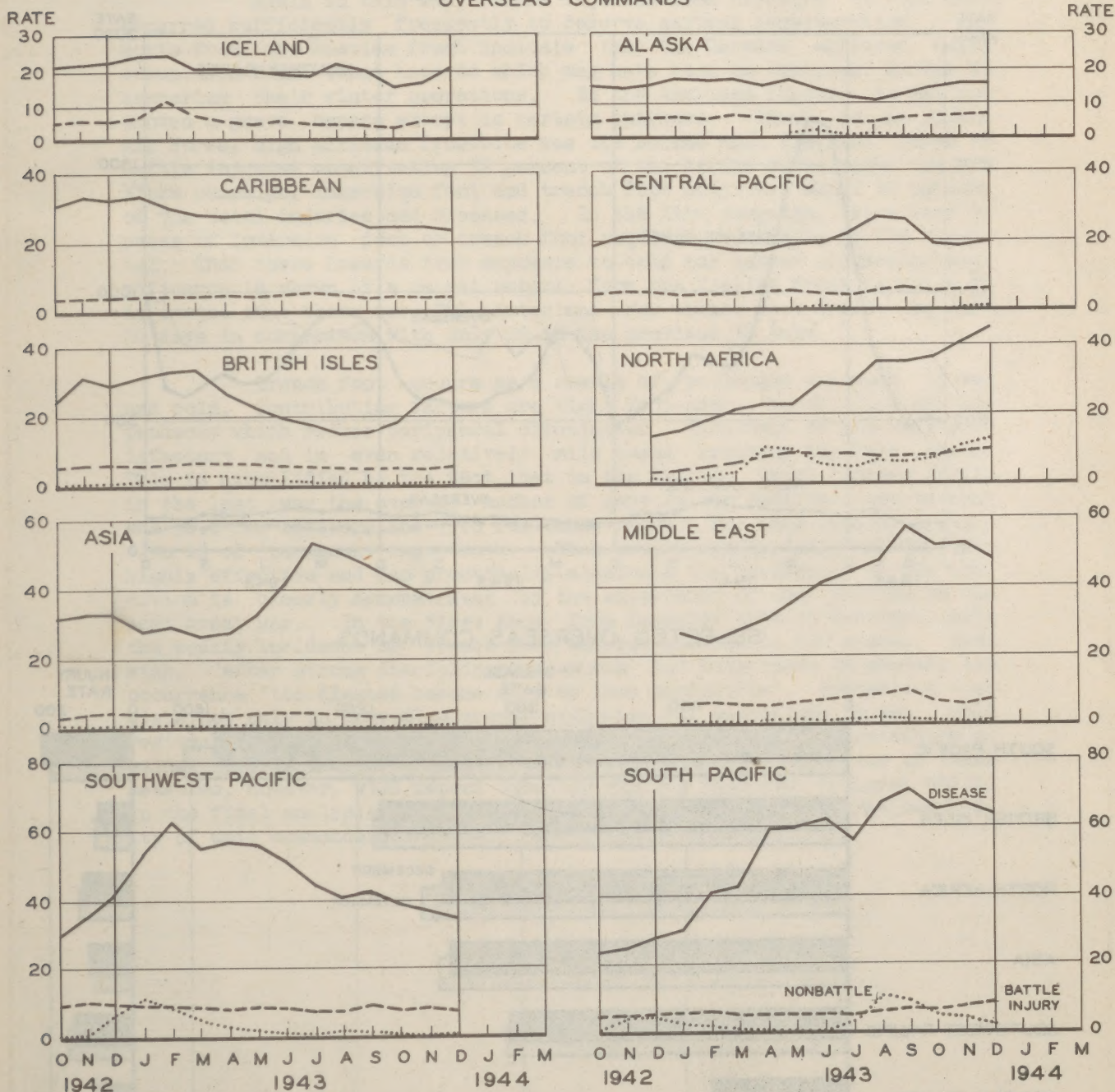
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## NONEFFECTIVE RATES OVERSEAS

The noneffective rate, measuring the cumulative effect of admissions to hospital and quarters, and the length of time lost, is the best index to the health of the Army. In the charts which follow, the total rates shown on the map across the page are separated into their components attributable to disease, injury, and battle casualty. Points for the most recent months are quite provisional, being based on radio reports.

In most large theaters or other commands the noneffective rate rose slightly during December, but there was a slight decline in the South Pacific and in the Middle East. In North Africa the rate rose sharply from 59 for November to 68 for December, the components being 46, 9, and 13 for disease, nonbattle injury, and battle injury. The battle casualty component has increased steadily since September. In the South Pacific, where the rate is also high, the components are 63, 8, and 2 for the first three weeks of December.

## NONEFFECTIVES PER THOUSAND MEN PER DAY OVERSEAS COMMANDS



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# DISEASE AND INJURY

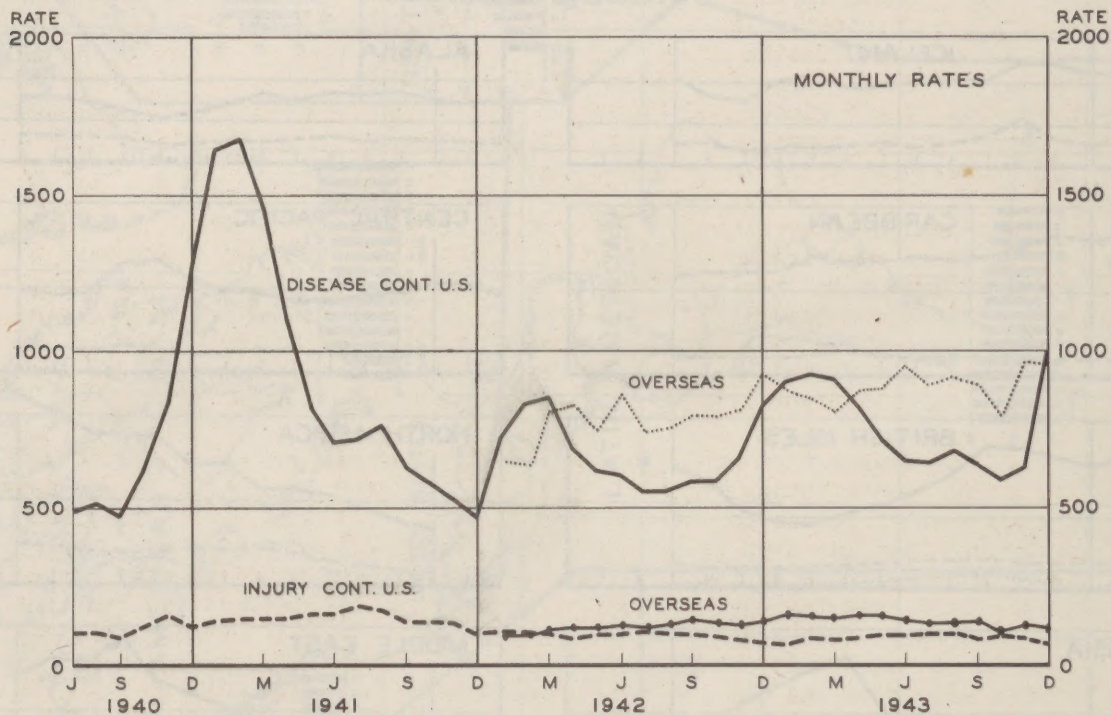
## DISEASE AND NONBATTLE INJURY

Under the influence of the respiratory epidemic in late November and December, the preliminary admission rate for disease among troops in the Continental U. S. advanced almost 65 percent during December to reach 999 admissions per thousand men per year, the highest it has been since the spring of 1941. The injury rate declined to the exceptionally low point of 67 admissions per 1,000 men per year.

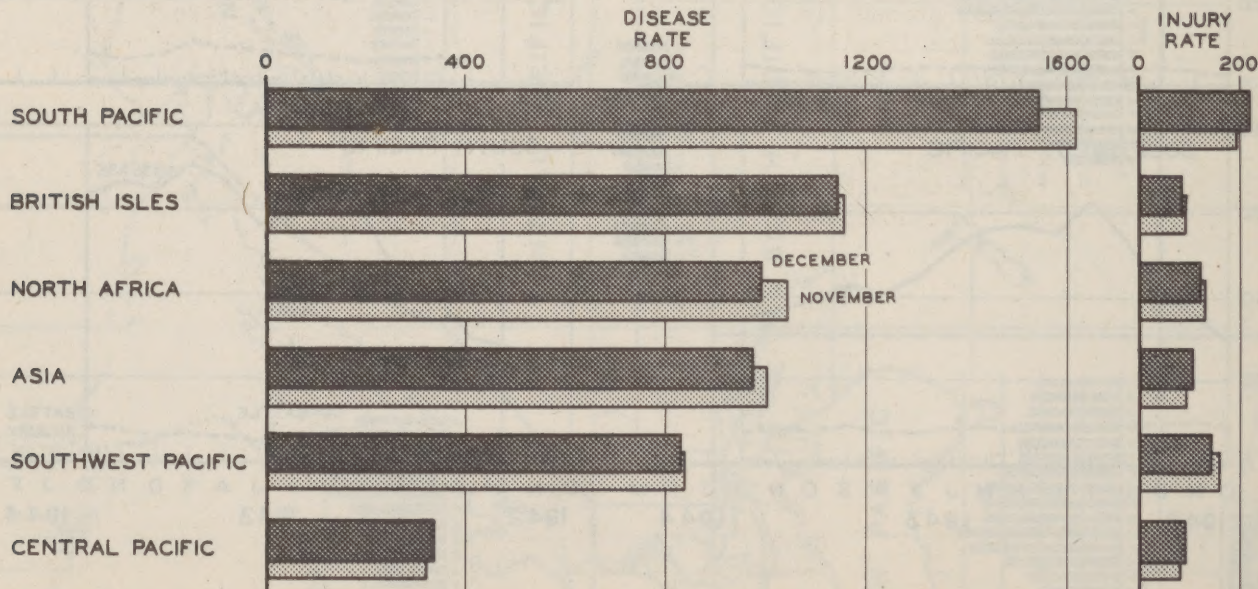
Among troops overseas the December admission rate for disease retained its high November level, but was exceeded by the U. S. rate. The admission rate of 121 for overseas troops in December is about 80 percent higher than the comparable U. S. rate.

The bottom chart compares November and December rates in selected theaters arrayed in the order of their admission rates for disease. The stable rate in the British Isles reflects the fact that the peak of the respiratory epidemic there occurred near the end of November.

DISEASE AND INJURY, ADMISSIONS PER THOUSAND MEN PER YEAR  
CONTINENTAL U.S. AND OVERSEAS



SELECTED OVERSEAS COMMANDS





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## DISEASE AND INJURY

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### TRENCH FOOT

Trench foot, immersion foot, and frost-bite are related conditions resulting from exposure to wet and cold. The potential significance of these weather hazards and their jeopardous effects upon military operations have been well demonstrated in previous wars. The high incidence of frost-bite and trench foot among Napoleon's forces in the Russian campaign seriously crippled their military effectiveness and undoubtedly contributed materially to the tragic end of this campaign. Indeed, it was Napoleon's Surgeon Larrey who gave the first and now classical description of trench foot. In the last great war, the British suffered heavily from these conditions especially on the Western front and in Gallipoli. In the latter region and during the short but crucial period of this campaign, there were 7,982 admissions to the hospital from these causes, a ratio of 68 per 1,000 strength. In the British Expeditionary Forces in France and Flanders during the winter of 1914 and 1915, there were over 29,000 cases admitted to the hospital with these conditions.

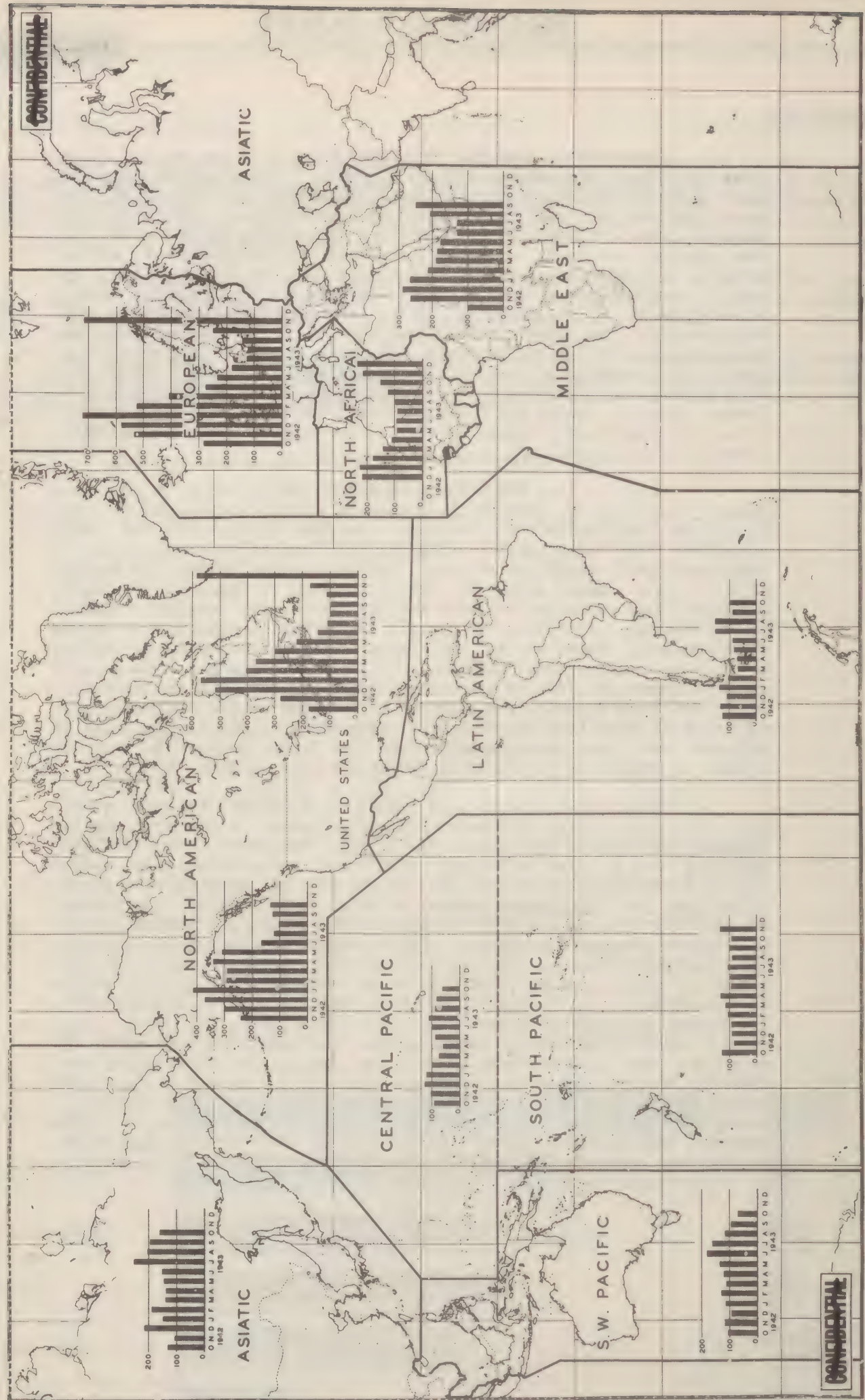
Again in this war, these injuries from exposure to cold have occurred sufficiently frequently to deserve serious consideration. Reports from the Russian front indicate that the Germans suffered heavy casualties from these hazards which may have been an important factor in hampering their winter operations. In the American forces, it has not proven a grave menace except in certain quarters. Thus, in the Eighth Air Force, high altitude frostbite was the second most frequent cause of battle injuries constituting 32 percent of the battle casualties. In the Kiska campaign, immersion foot and trench foot comprised about 10 percent of the total injuries and diseases. In the Attu campaign, there were 93 cases of immersion foot or trench foot requiring admission to the hospital. That these hazards from exposure to cold may assume increasing significance is shown by a recent report from the Italian front in which it is stated that there were 981 admissions for trench foot during the last 30 days in comparison with only 20 in the previous 30 days.

Trench foot occurs as a result of prolonged exposure to wet and cold. Contributing factors are tight foot-gear, immobility, and dependency which reduce peripheral circulation. Treatment is not very satisfactory and in even relatively mild cases recovery may take weeks. This is exemplified by the fact that in the British Expeditionary Forces in the last war the average number of days in the hospital per patient was 38.6 for officers and 75.6 for other ranks. For this reason, prevention is of paramount importance. That proper prophylactic measures are highly effective and can practically eliminate the occurrence of the condition is clearly demonstrated by the experience of the British in the last great war. In the First Army, from December 1914 to February 1915, the weekly incidence of trench foot was between 300 to 600 cases. However, "after strong disciplinary measures" had been taken to prevent its occurrence "the disease became more or less negligible". Prevention consists not only in providing proper equipment for operations in wet, cold regions but also in the careful instruction of personnel in protection against the hazards of exposure to wet and cold. The efficacy of these measures, however, will depend upon how rigidly they are followed which, in the final analysis, is a measure of discipline and is the responsibility of unit commanders.

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# DISEASE AND INJURY

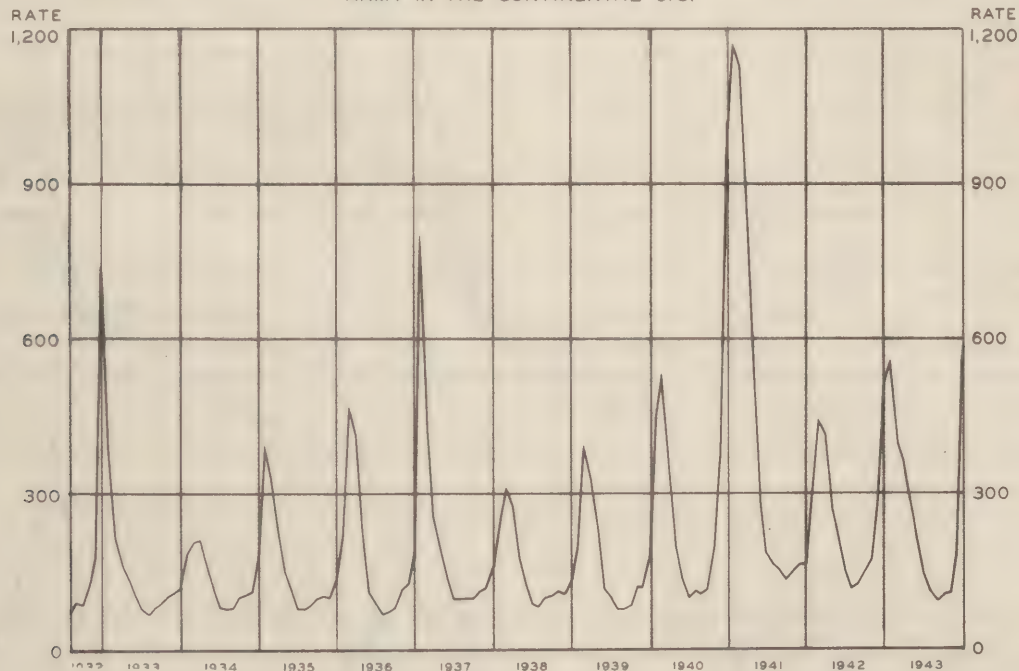
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## RESPIRATORY DISEASE, U. S. AND OVERSEAS

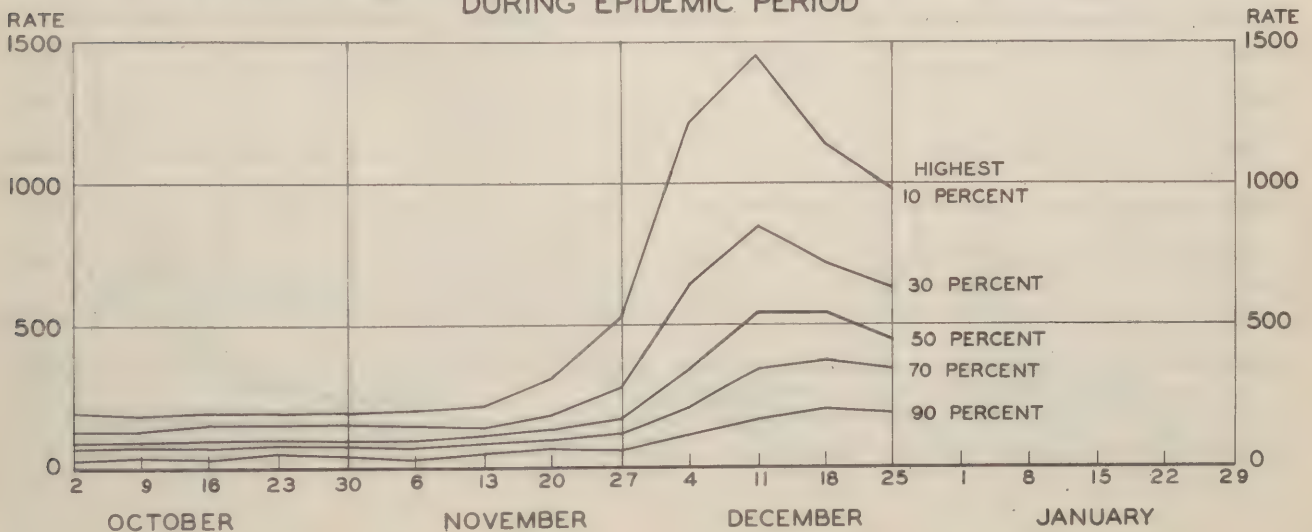
The recent mild but widespread influenza epidemic in the U. S. reached its peak during the week ending 11 December, when a rate of 651 respiratory disease admissions per thousand men per year was reported. During the following three weeks the rate declined to 613, 542, and 427. In the British Isles, where a somewhat similar but perhaps more extensive epidemic occurred in both the military and the civilian populations, the peak was reached during the week ending 27 November with a total respiratory rate of 1,082. Two weeks later the rate had declined to 619, according to preliminary reports. The map on the opposite page shows the latest information available for the various theaters or major sections. Telegraphic reports from North Africa indicate that the respiratory experience there has been well within the range of expectation for this season. U. S. Army forces in Central Canada reported a moderately widespread outbreak of respiratory infection during the two weeks ending 11 December, and outbreaks have undoubtedly occurred elsewhere.

In the bottom chart, drawn to a different scale from that used in the chart above it, the stations with an average strength of 5,000 or more have been grouped according to their admission rates over the period of the epidemic, and a line drawn connecting the points above which 10, 30, 50, 70, and 90 percent of the stations fell each week.

RESPIRATORY DISEASE, ADMISSIONS PER THOUSAND MEN PER YEAR  
ARMY IN THE CONTINENTAL U.S.



RATES ABOVE WHICH SPECIFIED PERCENTAGES OF STATIONS FELL  
DURING EPIDEMIC PERIOD



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# DISEASE AND INJURY

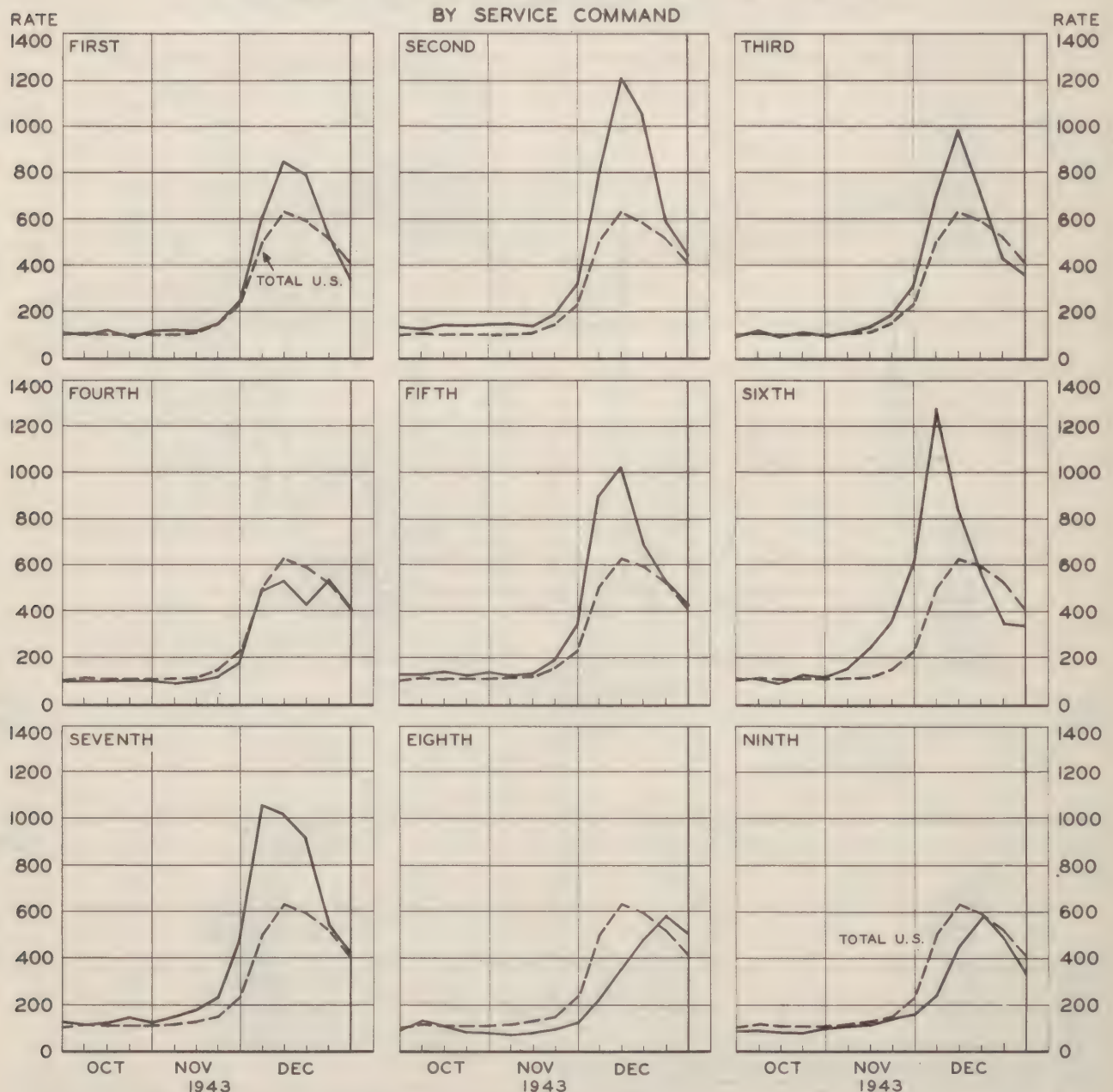
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## RESPIRATORY DISEASE, SERVICE COMMANDS

The rapid movement of the recent epidemic can be clearly shown only by means of weekly rates. These are plotted below for common respiratory disease plus influenza for each service command. The earliest and most precipitate rise occurred in the Sixth and Seventh Service Commands. The Eighth and Ninth Service Commands reached their peak admission rates comparatively late. Troops in the First, Fourth, Eighth, and Ninth Service Commands suffered proportionately fewer admissions than troops stationed elsewhere.

The disease has been uniformly mild and practically no deaths have occurred. Influenza virus A has been isolated in ten widely scattered geographical locations throughout the country. The disease bears a marked resemblance to that which prevailed during the 1940-1941 outbreak, but the peak incidence has been only about half as high and the present epidemic has been more explosive and of shorter duration. Experience of the past shows that serious epidemics of influenza frequently follow sharp outbreaks similar to that experienced in November and December. Therefore the possibility of a secondary wave of more virulent influenza should be kept in mind.

### COMMON RESPIRATORY DISEASE AND INFLUENZA ADMISSIONS PER THOUSAND MEN PER YEAR



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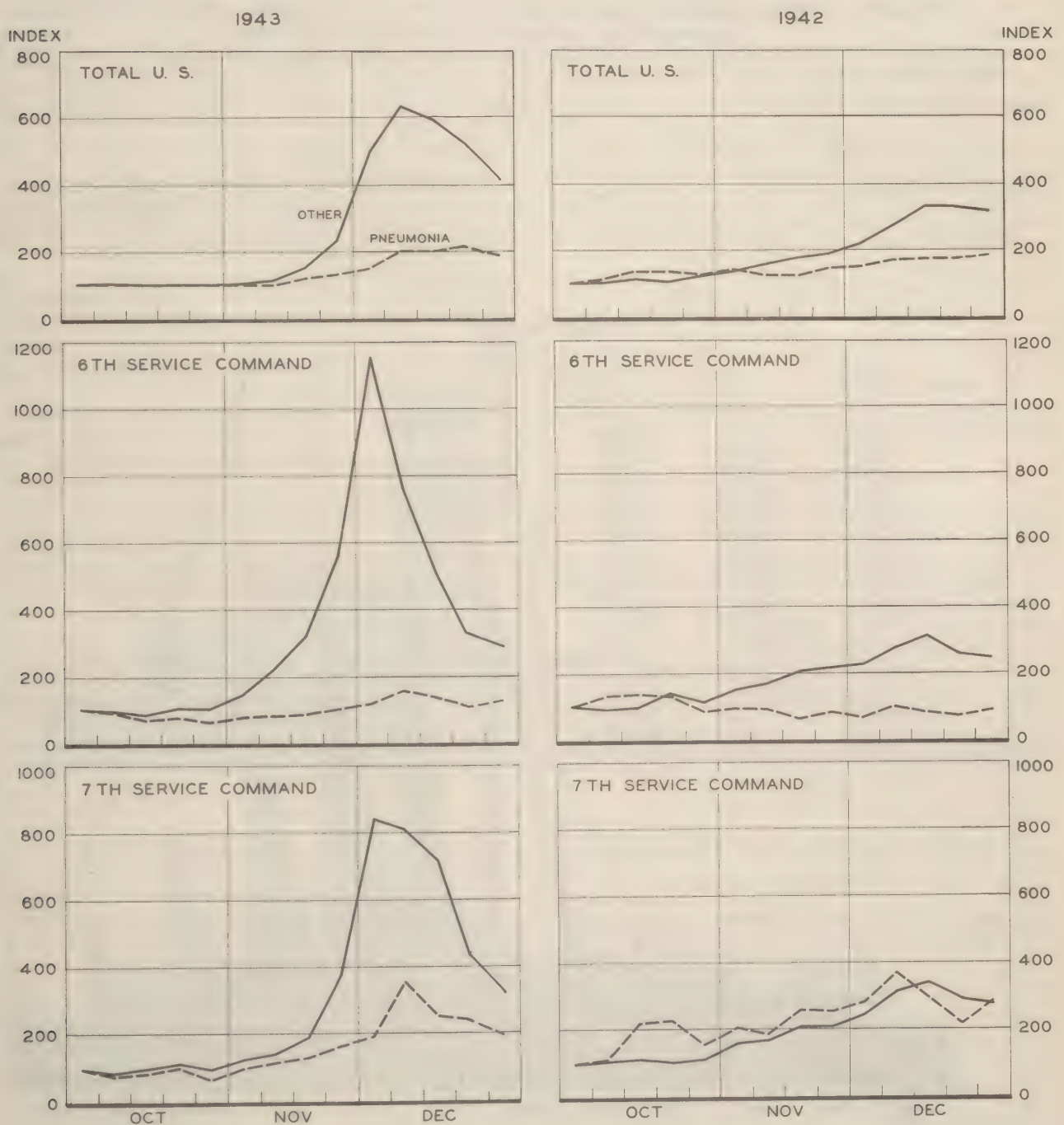
# DISEASE AND INJURY

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## RESPIRATORY DISEASE, SERVICE COMMANDS (Continued)

Despite the widespread character of the recent epidemic, there has been no definite sign of any exceptional increase in the incidence of pneumonia associated with it. The pneumonia admission rate has increased, but perhaps no more than would have been expected during the fall and early winter. The relative increase in pneumonia rates is shown below by weeks for October, November, and December of 1942 and 1943, and in relation to the relative increase in the rates for common respiratory disease and influenza. The rate for the first week in October is taken as the base of 100 in each instance and subsequent rates have been expressed as percentages of the base rate. Thus an index of 200 means that the rate is twice the base rate. Evidently the movement of the 1943 pneumonia rate did not differ materially from that for 1942, despite the mild influenza epidemic.

### RELATIVE CHANGE IN ADMISSION RATES FOR PNEUMONIA AND FOR OTHER RESPIRATORY DISEASES 1942-1943



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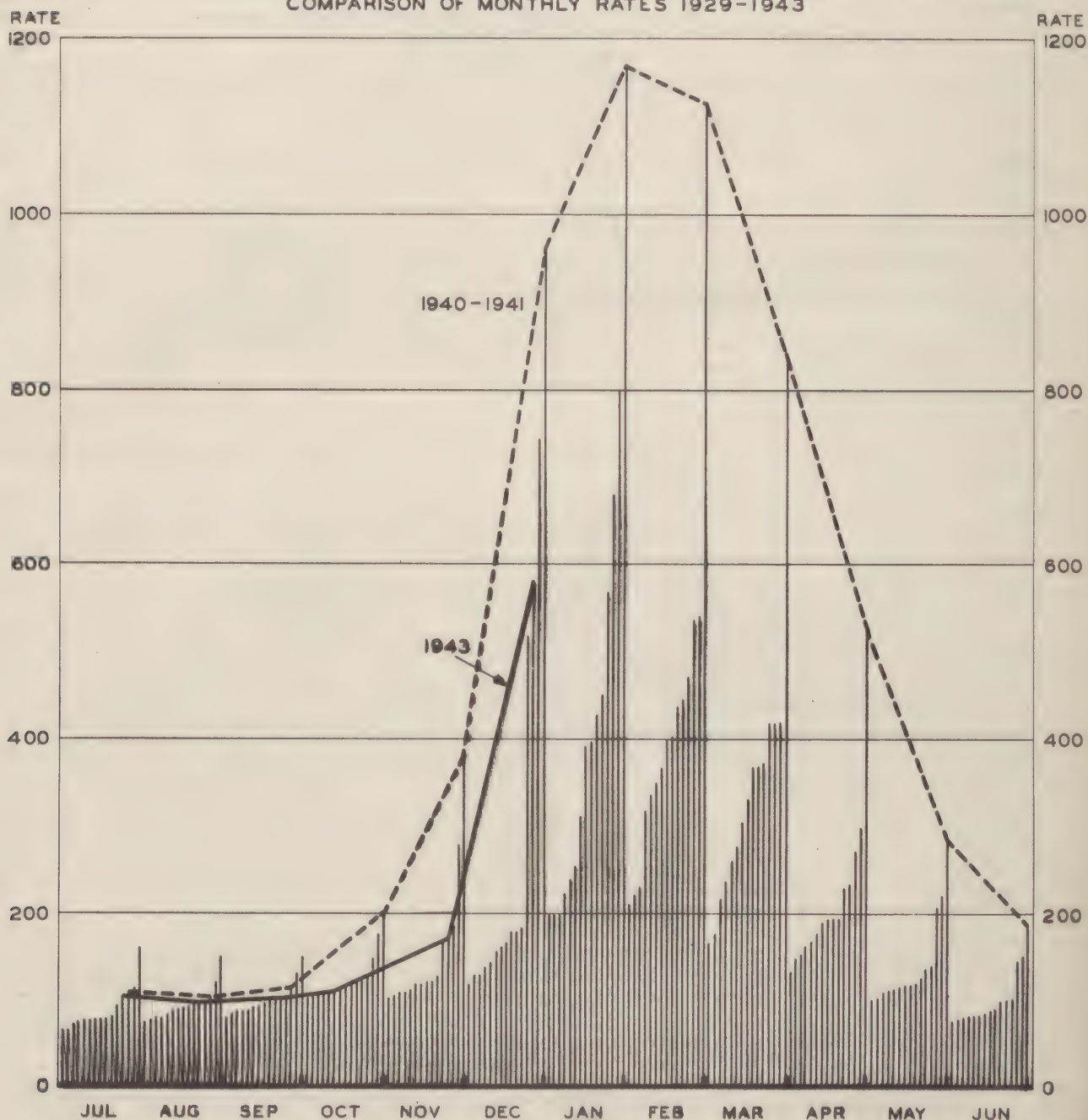


RESPIRATORY DISEASE, CONTINENTAL U. S.

Although the December rate of 580 respiratory disease admissions per thousand men per year represents the influence of an acknowledged epidemic, albeit a mild one, it is only the third highest December rate during the past 15 years. Should it turn out to be the peak for the 1943-1944 season it will be only the fourth highest peak over the interval, and only half of the high point reached during 1940-1941.

The recent experience is shown below against the background of the preceding 15 years. The rates for any calendar month are grouped together to show the typical seasonal pattern and the sharp deviations from the usual level which have at times occurred. The months are so arranged as to reveal the seasonal movement of the rates, but the rates for any month are given in order of magnitude rather than chronologically. The 1943 rates are joined by a solid line, and the 1940-1941 rates by a dashed line. The relative position of the 1943 November rate among all November rates contrasts sharply with the relative position of the comparatively low 1943 October rate.

**RESPIRATORY DISEASE, ADMISSIONS PER THOUSAND MEN PER YEAR**  
**COMPARISON OF MONTHLY RATES 1929-1943**





DISEASE AND INJURY

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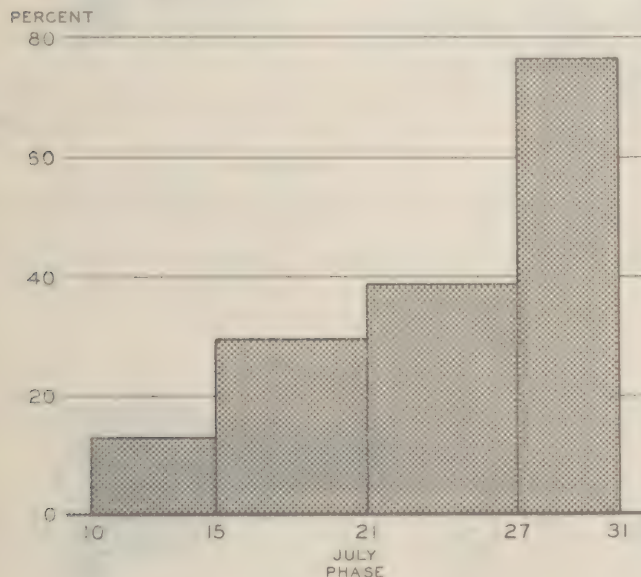
NEUROPSYCHIATRIC CASUALTY RATE DURING COMBAT

During the recent Sicilian campaign it was possible to record in some detail the number of neuropsychiatric casualties among three infantry battalions plus another unit during 21 days of continuous combat. A total of 158 neuropsychiatric casualties occurred in the entire group of 3200 men involved, a rate of 819 per thousand strength per year (in comparison with a neuropsychiatric admission rate of 35 per 1,000 strength per year in the U. S.). This was 19 percent of all casualties, and 31 percent of the neuropsychiatric plus combat casualties. The first panel below gives the percentage of neuropsychiatric among neuropsychiatric plus combat casualties for four phases of the period. The relative proportion of neuropsychiatric casualties rose steadily throughout the period, which was one of continuous combat. Although this particular experience is small, reports from the theater indicate this is characteristic. The longer troops are under fire the greater is the percentage of psychiatric disability. It is noteworthy that the troops concerned were veterans of previous campaigns from which the weaklings had dropped out. The neuropsychiatric disorders were, therefore, occurring in "normal" men.

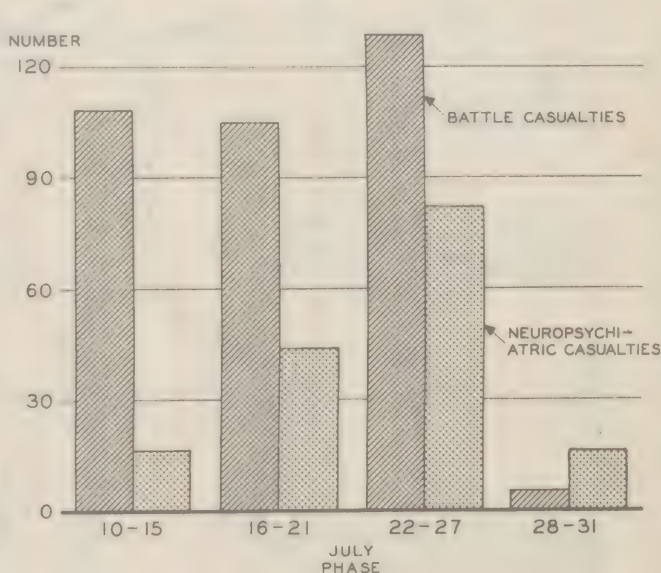
In addition to the factor of duration; others undoubtedly were operating. It might be thought that the intensity of combat increased steadily during this period and that the percentage of neuropsychiatric cases simply reflected this fact. However, as shown in the second panel of the first chart, the number of combat casualties during the last phase was less than in any of the three preceding phases. If the incidence of combat casualties is an index of battle intensity, therefore, it does not appear to have produced the upward trend.

This panel also reveals that twice as many neuropsychiatric cases developed in the Third Battalion as in any of the others. Again, this fact does not seem to stem from the intensity of the combat in which this battalion was engaged, for it had the least number of combat casualties. The bottom chart gives the percentage of battle casualties in each group. The three battalions were of equal size.

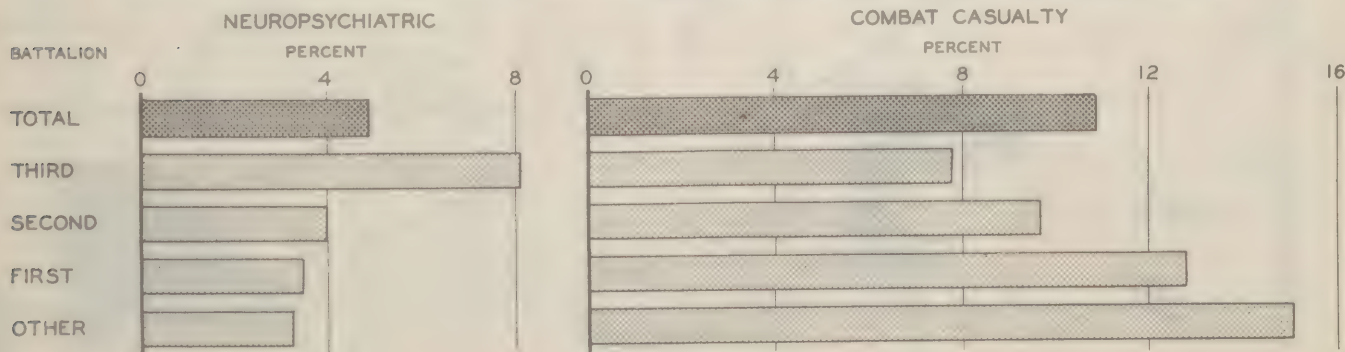
NEUROPSYCHIATRIC CASUALTIES AS PERCENT OF NEUROPSYCHIATRIC AND COMBAT CASUALTIES



NUMBER OF NEUROPSYCHIATRIC AND COMBAT CASUALTIES



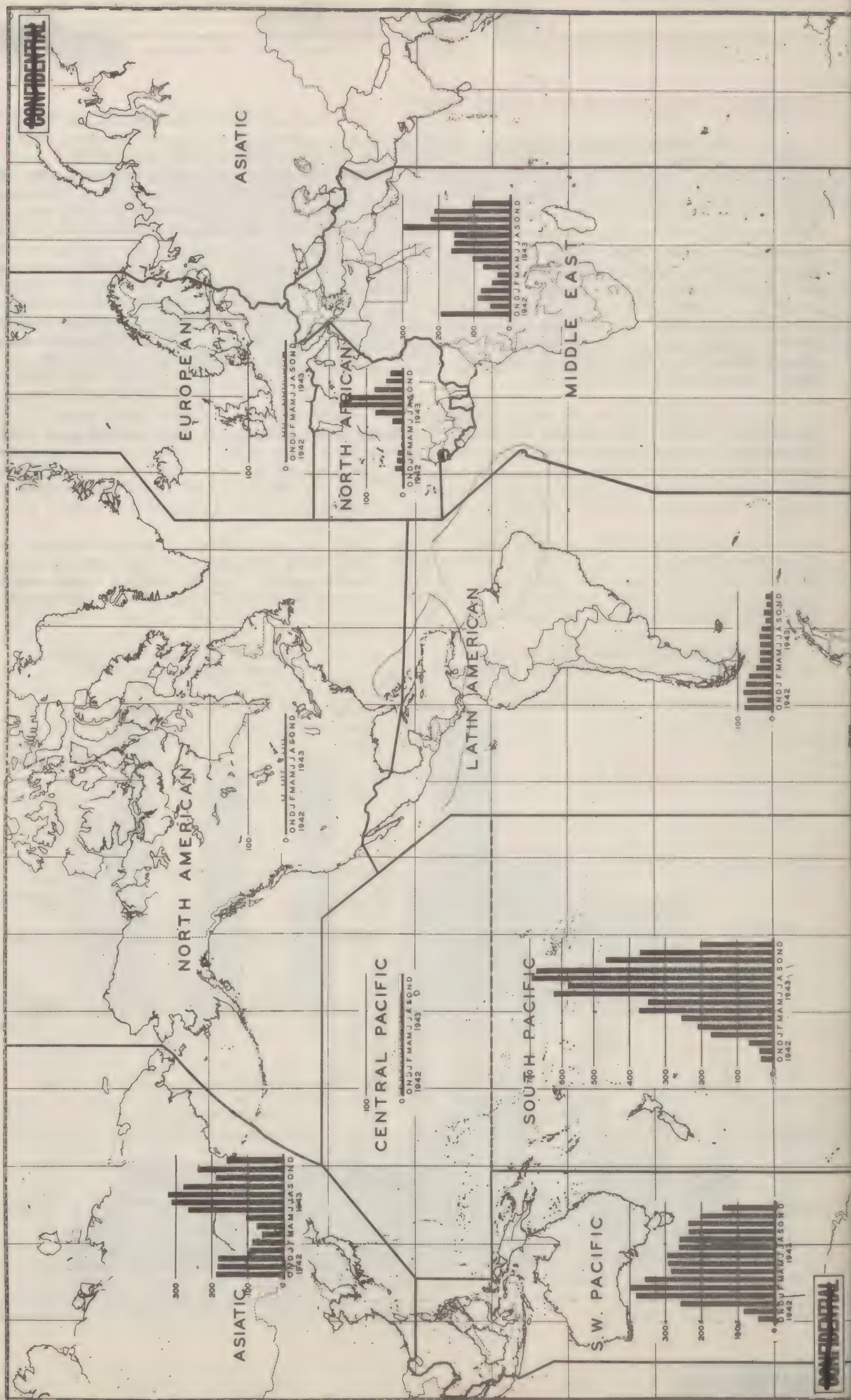
NEUROPSYCHIATRIC AND COMBAT CASUALTIES AS PERCENT OF STRENGTH, BATTALIONS



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## DISEASE AND INJURY

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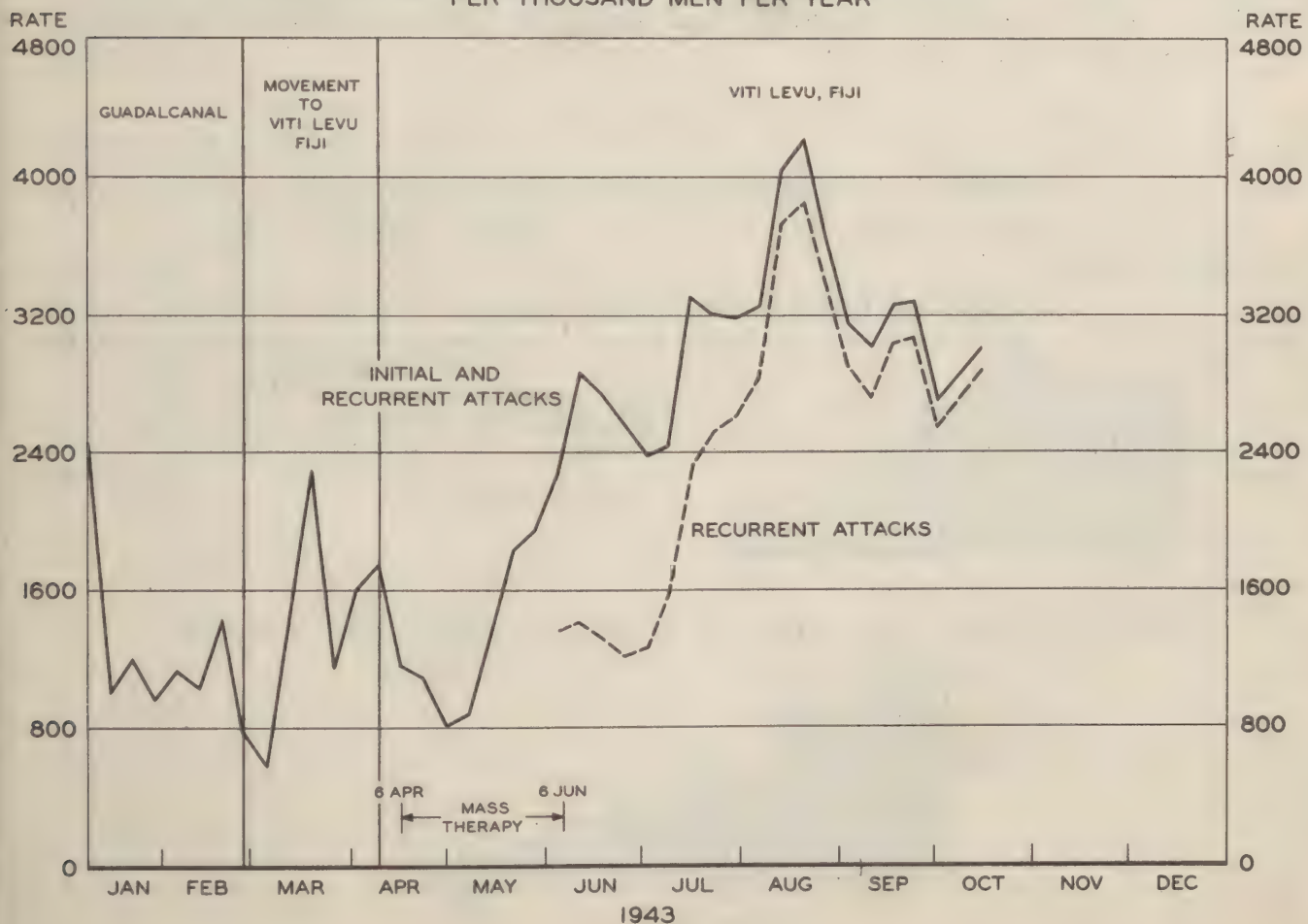
## MALARIA IN A COMBAT DIVISION

The full military significance of malaria may be obscured by mere reference to admission and noneffective rates for entire theaters containing malarious areas, but the history of any unit which has fought in a malarious area reveals in no uncertain terms the nature and gravity of the problem posed by the disease. Malaria has incapacitated, for periods of many months, many entire divisions in the South and Southwest Pacific. After their withdrawal from combat to rehabilitation areas, and after all transmission of malaria had ceased, they have suffered from recurring malaria to such an extent that they have been kept out of the fight for many months. In some cases they have had to be rebuilt. The history of one of the Army divisions first exposed to malaria is summarized below.

The Americal Division moved from non-malarious New Caledonia to malarious Guadalcanal in October and November 1942. The troops had to go through the height of the malaria season there, and there were important inadequacies of supplies and personnel essential for effective anti-malaria control. Until November there was no malaria control organization of any kind on Guadalcanal and the control program had to be built from the ground up. No tables of organization had at that time been set up for anti-malarial units. Troops were early placed on suppressive atabrine, which was continued despite some initial intolerances associated with the size of dose administered, but troops on front-line duty found it difficult to employ such individual protective measures as nets and the highly effective repellents now being used were not then available.

Because the clinical symptoms of malaria were partly suppressed by atabrine, even the very high admission rates while the division was on Guadalcanal were only a fraction of those which appeared after the period of transmission ceased. The first chart below pictures the admission experience of the division from the first week in January 1943 to the middle of October 1943. Fragmentary evidence indicates that both benign and malignant tertian malaria were present in December and January with some preponderance of the latter, caused by the parasite *Plasmodium falciparum*.

HOSPITAL ADMISSIONS FOR MALARIA, AMERICAL DIVISION  
PER THOUSAND MEN PER YEAR



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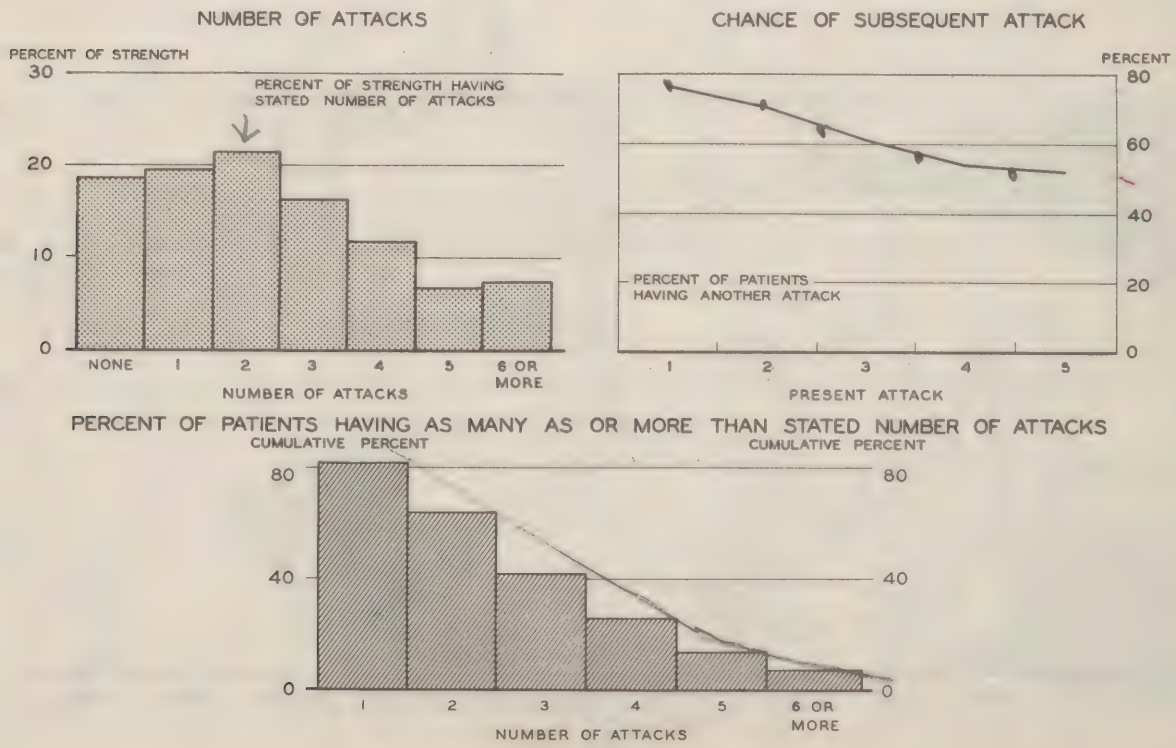
MALARIA IN A COMBAT DIVISION (Continued)

During March and early April the division withdrew to the non-malarious Fiji Islands for rest and rehabilitation. Because so large a proportion of the personnel of the division had suffered from malaria, a program of mass therapy was instituted early in April. However, its chief effect appears to have been a very temporary decline in the admission rate and it had no evident effect upon subsequent relapses. With the cessation of the suppressive treatment the malaria attacks which had merely been postponed thereby caused the rate of admission to rise to new heights of several thousand admissions per thousand men per year. As time passed the malignant type of malaria, which does not tend to relapse, disappeared, but relapses of benign tertian malaria recurred at regular intervals among a large fraction of the command. The noneffective rate moved from about 120 during May to a peak of 225 for one week in June. During August and September it ranged from about 130 to 150.

The detailed admission chart shows the recurrent attacks separately but all of the patients having their "initial" attacks on Viti Levu had previously had latent or subclinical infections. No transmission occurred on Viti Levu. The accompanying chart shows, in both simple and cumulative form, the percentage of strength (exposed on Guadalcanal) estimated as having experienced specified numbers of attacks on or before 30 September 1943. The right-hand panel provides a series of estimates of the percent of patients who, having had a given number of attacks, then had at least one more. The chance of subsequent relapse declined fairly rapidly with each succeeding attack and was about 50 percent for those with five attacks.

The treatment of malaria in the Americal Division has followed standard procedures. Malaria caused by *Plasmodium falciparum* showed little tendency to relapse, and practically no cases occurred after the first few months. However, the rate of relapse from benign tertian malaria was sufficiently great to produce a high noneffective rate for more than six months. Despite all that could be done with the drugs and supportive measures available, some men have developed a chronic malaria state which renders them unfit for combat service. The administration of atabrine in suppressive doses during rehabilitation greatly reduced the attack rate from relapses, primarily by lengthening the time between attacks. However, absence of acute symptoms of the disease does not imply full effectiveness, for repeated attacks impair morale, interfere with training, and sap the vitality of troops infected with the malaria parasite. Even those on suppressive atabrine may be in such condition that they are not fit for duty although they do not require actual hospitalization.

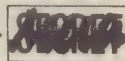
INCIDENCE OF RELAPSING MALARIA, AMERICAL DIVISION



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## DISEASE AND INJURY



## MALARIA IN A COMBAT DIVISION (Continued)

Eradication of the malaria parasite once it has gained access to the human host continues to be a real problem, the solution of which would go far to curtail the ravages of the disease. In the absence of a truly causal prophylactic or specific immunizing agent, improved protection against malaria must depend upon the prevention of the initial infection. Therapeutic agents now available control promptly the symptoms of a malarial attack, and also shorten the period of hospitalization and prevent complications and untoward after-effects, but they seldom completely cure the infection.

The Americal Division pursued a program of rehabilitation and training on Viti Levu, but its progress was greatly slowed by relapses of malaria contracted on Guadalcanal. By the end of September, after six months on the island, training had advanced to the point where battalion and regimental maneuvers were being conducted. Observations made upon certain elements within the division suggest that the use of atabrine to suppress relapses will greatly decrease the incidence of clinical malaria but that in many cases the suppression may not be sufficiently complete to ready the individual for combat duty. How effective and prolonged will be its benefits among troops heavily seeded with malaria has not yet been conclusively determined.

After eight months on non-malarious Viti Levu, the Americal Division still faced a serious problem in its malaria incidence, according to a technical report from South Pacific Theater headquarters dated 2 December. During the week ending 12 November there were 491 hospital admissions for malaria, a rate of perhaps 2,000 per year. The division had been alerted for forward movement and on 17 November it was placed on suppressive atabrine. Its subsequent history will be of great interest.

The Americal Division is by no means unique in the price it has paid for combat in a highly malarious area. Other Army Divisions, U. S. Marine divisions, and Australian divisions have had a similar experience. In the light of their New Guinea experience Australian medical authorities foresaw the necessity for the relief of combat forces at intervals of four months, so that for every division in the malarious combat area there would need to be a second more or less under hospitalization, and a third rebuilding for return to the front. At this rate about 250,000 men are required to maintain a force of 100,000 in a malarious combat area. Permanent losses from malaria were estimated at roughly 2,000 to 4,000 per month.

However, since the Americal Division landed on Guadalcanal there has been a great lessening in the cost of combat in malarious areas, and it is no longer necessary that such a toll be exacted. Control units are now an integral part of forward echelons, and anti-malaria work has been recognized as essential in part because of just such experiences as the Americal Division suffered. Malaria can be prevented and malaria can be suppressed. The greatest immediate hope for the effective control of malaria lies in the actual prevention of infection. Each individual soldier must understand what malaria is and how it may be prevented. Group methods of environmental sanitation and control are highly effective, but under combat conditions it is largely what the individual soldier does for his own protection that counts. Unless he knows how and wills to protect himself with the means provided he may be expected to contract malaria in a short time in a highly malarious area. For these reasons malaria control is primarily a command function, necessitating the maintenance of a high state of malaria discipline. If commanders do not enforce control measures they jeopardize the success of their mission.





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## DISEASE AND INJURY

### FILARIASIS

Continued operations in the South Pacific have exposed both Navy and Army personnel to filariasis, a common tropical disease noted for its serious complications in the chronic stage. Although there is no evidence that its incidence has been especially great among Army troops, the disease is one which develops only after many months of continued exposure, and the most recent statistical reports suggest that it is definitely on the increase. Filariasis is not likely to prove especially serious if the patient can be removed from all chance of continued infection, but chronic neglected cases seen in many of the natives of endemic areas manifest disabling complications which have an unfavorable influence upon the morale of troops stationed there. The disease is widely endemic in tropical areas as may be seen from the accompanying map. However, its exceptional prevalence on certain of the South Pacific islands deserves consideration in the selection of base areas for supply, training, and hospitalization. No cases have been reported among U. S. Army personnel in the South Atlantic, although filariasis is endemic in all the cities adjoining U. S. Army bases in Brazil.

Spread by certain varieties of the mosquito, filariasis is a disease of the lymphatic system. In its chronic stage it may cause elephantiasis (enlargement) of the upper or lower extremities or scrotum. The causative organism is a thread-like worm deposited in larval form on the skin by feeding mosquitoes. The adult worm, *Wuchereria bancrofti* lives in the lymphatic vessels of man. Because weeks may elapse between infection and infectivity, the disease does not spread rapidly as may malaria or dengue. The victim must apparently be infected repeatedly before he in turn becomes infective, or before he shows symptoms of elephantiasis. There is no relation between infectivity and the presence of symptoms. The larval or infective form may frequently be obtained from asymptomatic individuals, while on the other hand, victims of elephantiasis do not necessarily show infective forms in the blood. Exposure for six months to a year is usually required before signs of infection develop. An important part of the treatment is the removal of the patient from all chance of reinfection.

FILARIASIS, MAP OF ENDEMIC AREAS



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## DISEASE AND INJURY

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FILARIASIS (Continued)

The cases seen thus far among Army personnel have been relatively mild. On this account there has been sufficient diagnostic difficulty to suggest that the available statistics, summarized below, are probably erroneously low. Definitive diagnosis is by means of parasitological findings which may not become possible until a year or more after the original infection. A tabulation made 21 November lists the numbers of Army cases which had been diagnosed at the various islands in the South Pacific Theater by that date, as follows:

Bora Bora	212
Aitutaki	73
Samoa Group	19
Tongareva	5
Efate	1
Espiritu Santo	1
Fiji	1

The statistics reported by the South Pacific Theater to The Surgeon General are shown below by months, for 1943, there having been none in 1942:

Month	Cases
Jan	1
Feb	4
Mar	0
Apr	2
May	0
Jun	0
Jul	48
Aug	15
Sep	23
Oct	62
Nov	193
Dec*	183

\* Telegraphic reports covering three weeks only.

Since the disease is spread by infected mosquitoes, control consists primarily of anti-mosquito measures, both environmental and individual in character. Malaria control units have proved useful against filariasis. Quartering of troops in proximity to native villages is undesirable, for surveys have shown that a high proportion of the natives on certain of the islands are infected with the parasite. The proportion of infected mosquitoes is greatest in the immediate vicinity of native habitations. Systematically carried out against the vector which transmits the disease from the human reservoir of infection to others, modern anti-mosquito measures, strengthened by good discipline, can be very effective against the disease. When troops are to occupy or are to be stationed in a filariasis area, plans should be made in advance for the institution of prompt anti-mosquito measures by competently trained personnel. Troops should be disciplined in the use of bed nets, protective clothing, repellents, and insecticidal sprays, and adequate supplies of these materials should be maintained. Experience to date indicates that risk of filariasis among military personnel is greatest in certain islands of the South Pacific.

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SCRUB TYPHUS

Since the publication, in the October Issue of HEALTH, of general information about scrub typhus in the Southwest Pacific a preliminary report has been received from the special commission on scrub typhus which was sent to New Guinea at the request of General MacArthur in September 1943 through the Office of The Surgeon General. This group of investigators went into the field under the auspices of the U.S.A. Typhus Commission and the Army Epidemiological Board. Having completed the first part of the mission, part of the group returned to the United States in December and the following specific information is drawn from a preliminary report submitted by the director of the group.

General Considerations

Scrub typhus began to occur among troops based in Port Moresby in August and September 1942, and among the units moved into Milne Bay during the fall months. These two foci of the disease have, however, been relatively unimportant. The incidence of scrub typhus increased sharply when the Australian and later the American Army forces reached the north coastal plain of Papua in the vicinity of Dobadura, Ora Bay, and Buna, during December 1942 and January and February 1943. As operations advanced up the coast during the spring and summer, cases continued to occur in the units moving into the occupied areas, and among the Australian troops engaged in active field operations in the zone of advance.

From the first of October 1942 until the end of September 1943, there were recorded in the Australian Army about 1,200 cases of scrub typhus with approximately 70 deaths. Among the U. S. Army forces operating in New Guinea the disease has not contributed significantly to the noneffective rate, but it has elevated the death rate from disease even though the actual number of deaths is not large.

The epidemiological study of the Commission has been limited to the occurrence of the disease in the U. S. forces in the vicinity of Ora Bay, Dobadura, and Buna during the four months period from 1 August to 1 December 1943. This base area for operations of the Air Force, for the staging of combat troops, and for supply had become well organized medically at the beginning of this period. There were then in operation three station hospitals. An additional station hospital was set up and began to receive patients in late September. After the first of August practically all the acutely ill patients in this area were cared for in these four hospitals. Medical services were stabilized and medical officers became acquainted with the diagnosis of "scrub typhus". Complete records of admission and discharges were available.

Inferences Regarding Circumstances of Infection

1. Transmission is not seasonally limited. During the past year new infections have been reported in every month.

2. The risk of infection is not evenly distributed geographically. It seems to be associated principally with kunai grass fields bordered by jungle strips along watercourses. Troops occupying such localities may have many cases of scrub typhus, a few scattered cases, or no infections whatever. Present knowledge does not permit a distinction between those localities in which the danger of infection is great, and those in which there is little or no risk. The disease is, therefore, focally distributed. The minimum incubation period of scrub typhus is about ten days. The maximum incubation period is unknown, but it seems not unlikely that the onset might be delayed as long as 18 days after exposure, or that it might be three weeks until the patient is admitted to the hospital. From the data presented, 71 percent of 141 cases may have been infected within the first few days after arrival. More than 90 percent of the cases have occurred within six weeks; thereafter the incidence becomes sporadic.

3. The risk of infection is maximum:

a. During the first four to six weeks after an organization has occupied a camp site which has not been previously used, or

b. Where an organization engaged in combat is constantly moving into and occupying "new" areas.

4. As a camp area is cleared and put in order, the risk of infection becomes progressively smaller. After two months, in all the instances observed, it has been reduced to a low level which may subsequently give rise to an occasional or sporadic case.



## DISEASE AND INJURY

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### SCRUB TYPHUS (Continued)

5. There is little, if any, correlation between the frequency of "scrub itch" and the frequency of infection with scrub typhus. There may be considerable complaint of "scrub itch" (caused by chigger bites) and no scrub typhus, or there may be little or no complaint of "scrub itch" and many cases of scrub typhus. A majority of the patients examined in the hospitals of the base area studied gave no history of "scrub itch" and did not have the characteristic skin lesions at the time of admission.

6. The distribution of the lesions of "scrub itch" on the body is characteristically on the lower leg and under the belt. The "eschars" or dry scabs of scrub typhus are distributed at random over the whole body surface, with a tendency to be more frequent in protected moist areas of the skin, such as in the axillae and the perineum, and on the scrotum. It is further to be noted that the lesion which leads to eschar formation does not itch. This suggests that itch mites may differ significantly from those of the mite which transmits typhus. It is entirely possible that itch mites commonly attack man in the standing position, but that the mites which cause typhus attack man when he is quietly sitting or lying on the ground.

7. The risk of infection in a given locality cannot be measured by observation upon the density of the population of all species of mites. It is proportionate to the numbers of the specific vector species of mite and to the rate of parasitic infection of these mites with the specific Rickettsiae which cause scrub typhus.

### Prevention

Effective control of the disease appears to require the following measures:

1. Locations which are to be used as new camp sites should be prepared as fully as possible by the Corps of Engineers before the arrival of a new unit. Native labor should be used so far as practical for cutting and burning over a kunai grass field, and for clearing out underbrush in any adjacent jungle strips.

2. It should be the duty of the Base Commander to inform the officers of any unit arriving in the area that there is danger of scrub typhus and that precautionary measures are necessary.

3. So far as possible, sleeping on the ground should be avoided. Cots should be provided. Flooring for tents should be installed, preferably raised two or three feet above the ground.

4. At the earliest time after exposure to mite biting in the field, men should be instructed to take a bath with thorough soaping and scrubbing of the skin with a rough cloth. They should then put on a change of clothing.

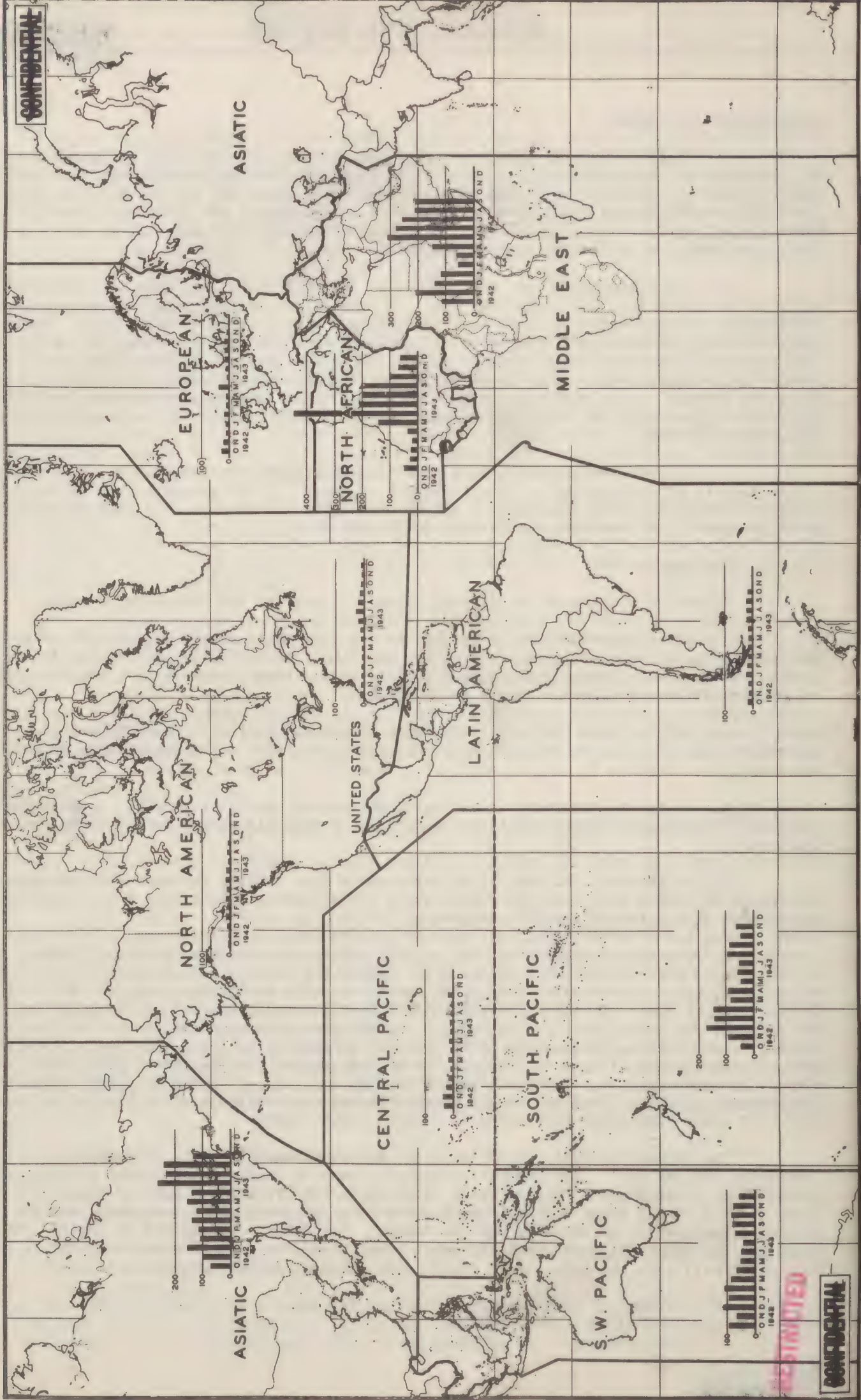
5. Dimethylphthallate or 612 mosquito repellents are the most satisfactory anti-mite fluids at present available to the U. S. Army. The application of these fluids directly to the skin, as has been advised to repel mosquitoes, is ineffective against mites after a short period of time. The anti-mite fluid should be liberally applied to the socks and trouser bottoms, and rubbed into the fabric. The socks should then be pulled up over the trouser bottoms. The wearing of leggings alone does not afford protection. Obviously, this method does not protect men sitting or lying on the ground, or putting on clothes which have been in contact with the ground. A method for the treatment of all clothing has been developed by the Australian Army. This is the only method at present available for reducing the risk of infection under conditions prevailing in forward combat areas.

The Surgeon General is taking steps to put these and other recommendations of the Commission into effect. The Commission brought back to this country eight strains of the Rickettsiae causing scrub typhus which were recovered from the blood of eight patients. These strains and a large collection of serum from patients under treatment are now under further investigation in the Army Medical School, the National Institute of Health, and the Naval Medical Research Institute. Attempts will be made to produce a vaccine and to find a drug which will cure the infection. Field investigations are being continued.

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# DISEASE AND INJURY

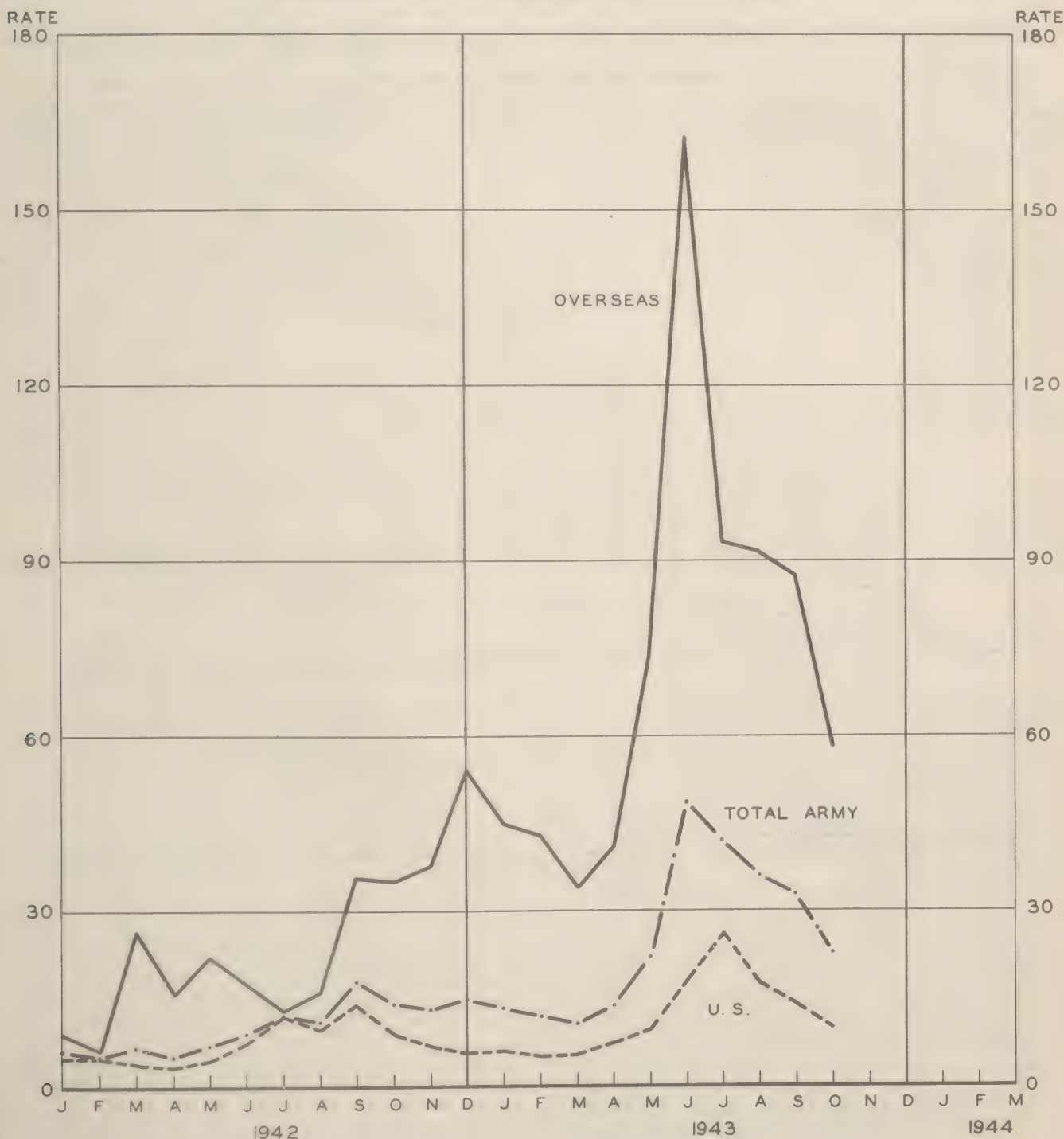
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## DIARRHEA AND DYSENTERY

The incidence of diarrhea and dysentery continues to be appreciable in the Middle East, Asia, North Africa, and the South and Southwest Pacific. In North Africa it has declined steadily from the exceptionally high summer level to an estimated 61 admissions per 1,000 men per year for December. In October, the rates for the Fifth and Seventh Armies were only about half that for the theater, according to telegraphic reports. The highest rates at that time were reported from the Atlantic and Eastern Base Sections.

The chart below presents a series of admission rates for diarrhea and dysentery for the U. S., overseas, and the total army since January 1942. For the period ending 30 September 1943 the average admission rates are 10 for the U. S., 61 for overseas, and 20 for the total Army.

DIARRHEA AND DYSENTERY  
ADMISSIONS PER THOUSAND MEN PER YEAR



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# DISEASE AND INJURY

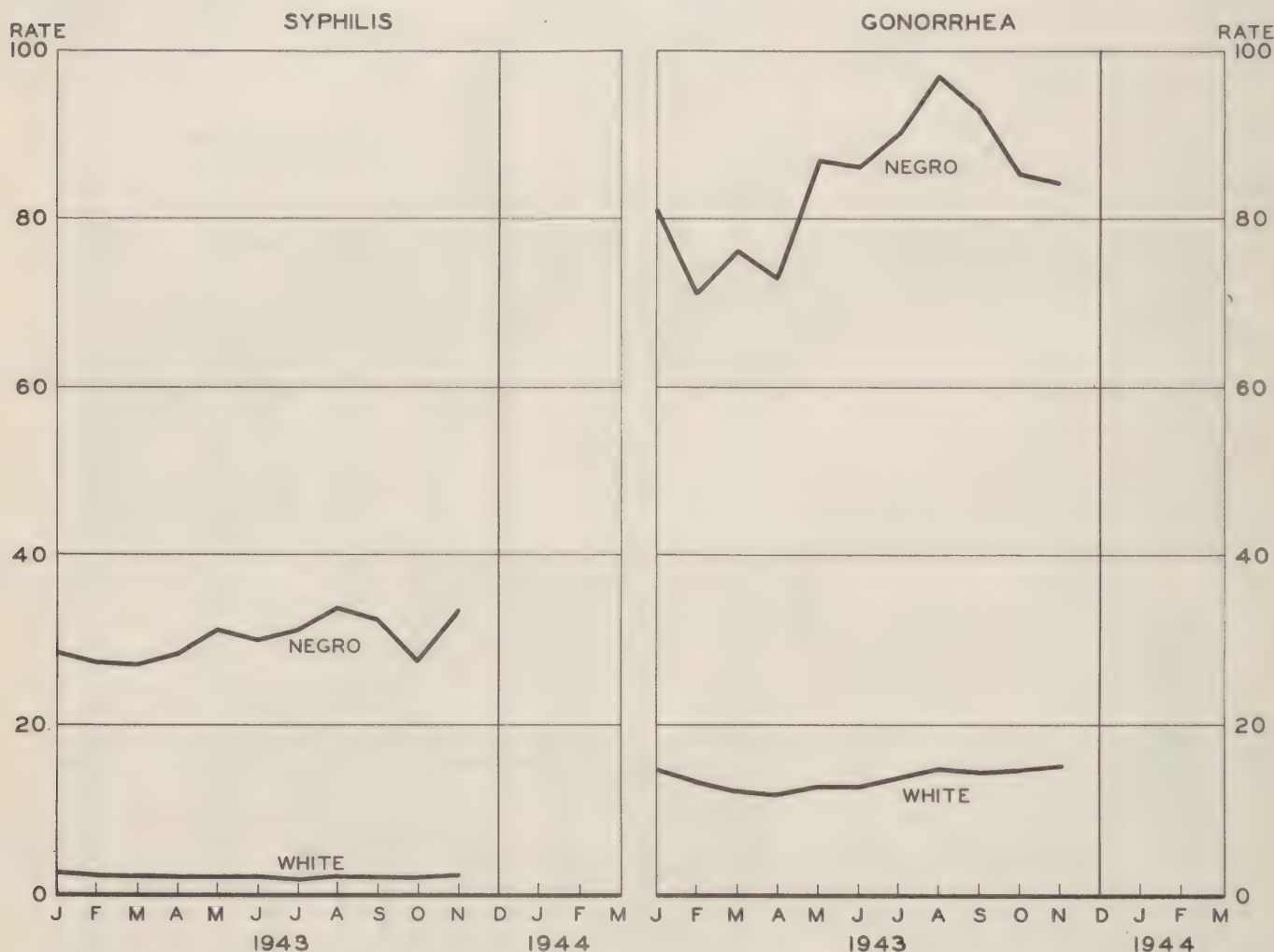
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## VENEREAL DISEASE

Reduction of the disproportionately high rate of venereal infection among Negro troops is one of the major problems of the Army Venereal Disease Control Program. Although Negroes comprise a relatively small proportion of the total strength their rates, which have on occasion been as much as 10 times those for white troops, are so high that they influence markedly the average venereal rate for all Army troops.

The admission rates for gonorrhea and syphilis among troops stationed in the Continental U. S. are given in the chart below. They show how little change there has been in the admission rate for whites, and how important the changes are in the rates for Negro troops, after a generally upward trend from April to August. The gonorrhea rates for Negro troops declined in September and October, and leveled off in November. The syphilis rate for Negroes after having declined for two months rose sharply to reach a new high for 1943.

VENEREAL DISEASE, ADMISSIONS PER THOUSAND MEN PER YEAR, BY COLOR  
ARMY IN THE CONTINENTAL U.S.





DISEASE AND INJURY

DENTAL ADMISSIONS AND TREATMENTS

During the six months ending November 1943 the admission rate for Vincent's Stomatitis in the Continental U. S. has been somewhat higher than in previous months of this war. Although the rates in the table below for June through November are approximately 75 per cent higher than the rates for peace-time years, the present incidence and trend are satisfactory. The total overseas rates have been lower than those of the Continental U. S., and are comparable to peace-time years. The table below also presents the rates for the more common infections, for fractured jaws, and for important dental treatments.

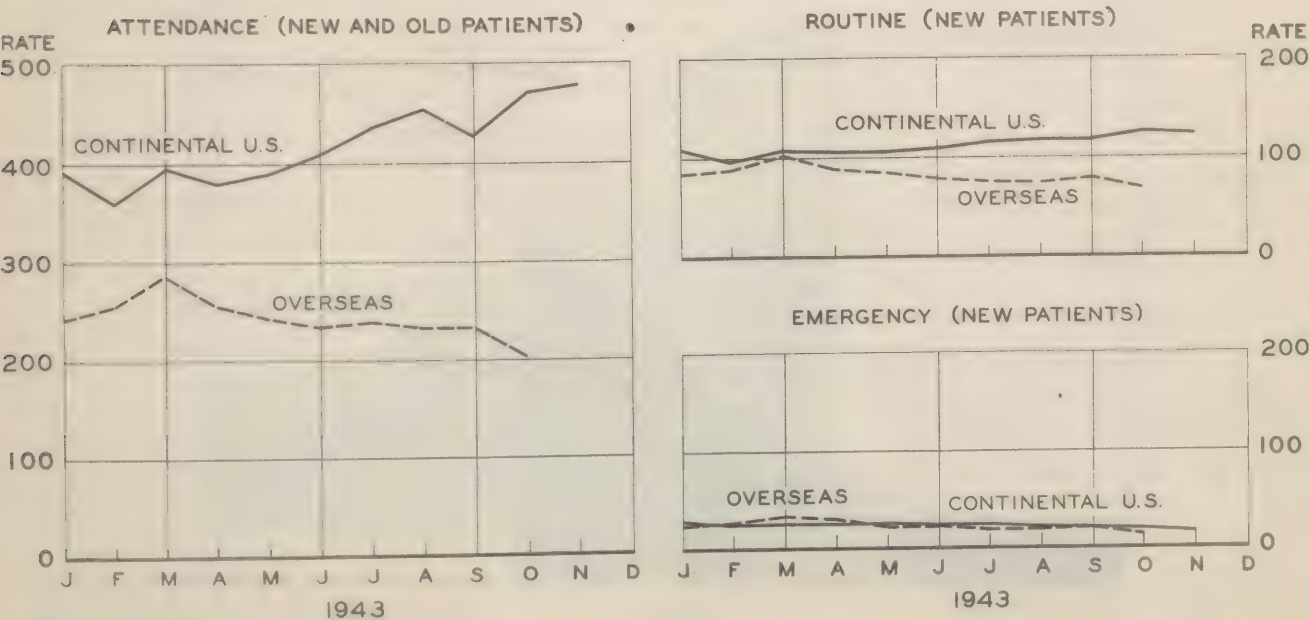
The incidence of jaw-fracture is somewhat higher for the troops overseas than for those in this country. The overseas rates have increased sharply in 1943, the result of intensified training, transportation, and contact with the enemy. The rates for restorations and dentures have gained steadily throughout the year 1943, with a high point of 393 restorations in the months of October and November. Denture construction in the Continental U. S. also reached a record peak in November with 15.2 per 1,000 men per month. The overseas rate for restorations and dentures has been approximately the same during the year 1943. The extraction of teeth appears to be declining steadily, presumably because of fewer inductions.

Dental attendance has continued to rise throughout the year as equipment and supplies have become better distributed and needed personnel has been assigned. The overseas requirements for dental care have been appreciably less because the greater portion of the dental service was completed before the troops were permitted to embark. There is no appreciable difference in the incidence of emergency dental appointments in the U. S. and overseas.

DENTAL DIAGNOSES AND TREATMENT PER 1,000 MEN PER MONTH*									
Month	Stomatitis Vincent's	Fractured Jaws	Cellu- litis	Osteo- myelitis	Resto- rations	Extrac- tions	Den- tures	Denture Repair	
U. S.	June	3.61	.05	.16	.005	327	92	12.4	1.7
	July	4.19	.05	.18	.003	356	85	13.3	1.9
	August	4.43	.06	.15	.007	375	80	13.9	2.1
	September	4.86	.07	.16	.005	379	75	13.8	2.3
	October	4.37	.05	.17	.006	393	73	14.9	2.6
	November	4.13	.06	.18	.007	393	69	15.2	2.9
Overseas	June	2.77	.11	.17	.006	149	41	3.6	1.7
	July	2.67	.12	.20	.004	153	37	3.5	2.0
	August	2.76	.10	.17	.015	144	37	3.5	2.0
	September	2.80	.09	.16	.008	150	36	3.7	2.0
	October	2.64	.09	.14	.003	116	26	3.0	1.7
	November								

\* The figures for September, October, and November are tentative.

DENTAL ADMISSIONS AND ATTENDANCE PER 1,000 MEN PER MONTH





## HOSPITALIZATION

### UTILIZATION OF AND REQUIREMENTS FOR BEDS IN NAMED GENERAL HOSPITALS

The requirements for beds in general hospitals are calculated at one percent of total Army strength plus 0.7 percent of the troops overseas. The estimated needs for the period January 1942 to December 1944 are shown in the chart below. The line of projected availability reflects construction and conversion in progress, and is revised as estimated dates of occupancy become available for new facilities. Attainment of the present schedule would provide about 98,000 beds by the end of June 1944, or 92 percent of the calculated requirement for that date.

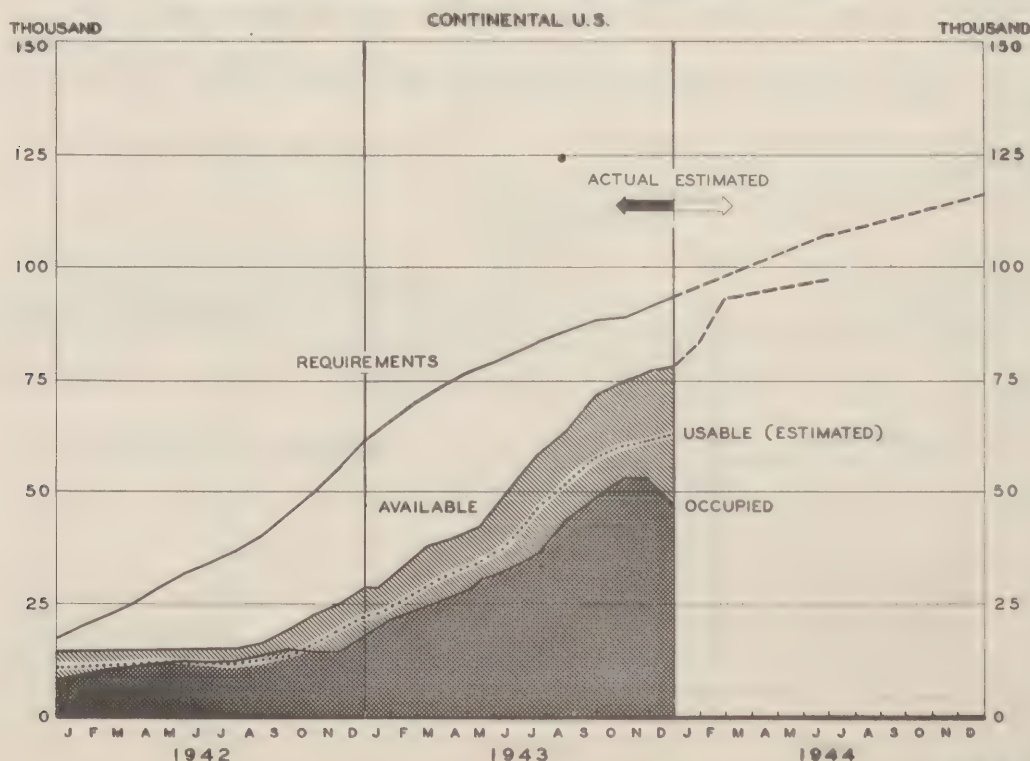
The anticipated needs for beds in general hospitals have not yet completely developed because the Army has enjoyed excellent health and especially because the flow of evacuees from overseas has not yet attained the proportions which planning has necessarily assumed. Should overseas operations in the near future increase the number of evacuees from overseas to 25,000 to 30,000 per month, an acute shortage of beds in general hospitals might result. For this reason plans are being made to modify hospitalization policies in the direction of caring elsewhere for some types of patient now sent to general hospitals, and for providing a more adequate program of convalescent hospitalization. It will undoubtedly also be necessary to expand general hospital facilities by conversion of large station hospitals no longer needed. Plans for such conversion are under discussion.

The broken line close to the line of occupancy represents the average limit of normal utilization without overcrowding, since at any one time about 20 percent of the available beds cannot be used because of the importance of maintaining specialized wards, e. g. for women, surgical cases, patients suffering from contagious and infectious diseases, and the like. When more than 80 percent of the normal beds are occupied, the average hospital has found it necessary to crowd beds into corridors and solaria, or to place patients in expansion barracks.

The number of available normal beds in named general hospitals increased about two percent from 76,500 for 27 November to 77,900 for 25 December. The average number of beds occupied declined sharply from 69 to 59 percent. This was because the number of beds increased and the number of patients declined, possible somewhat under the influence of the holiday season.

Although all hospitals (except Mason, not counted against the authorized total) are included in the above counts and in the chart below, certain hospitals have ceased to operate as general hospitals and should be regarded as receiving and evacuation hospitals for overseas patients. These are Lovell, Halloran, Stark, Barnes, and Letterman, and represent a loss of 7,828 normal beds.

REQUIRED AND AVAILABLE GENERAL HOSPITAL BEDS





## HOSPITALIZATION

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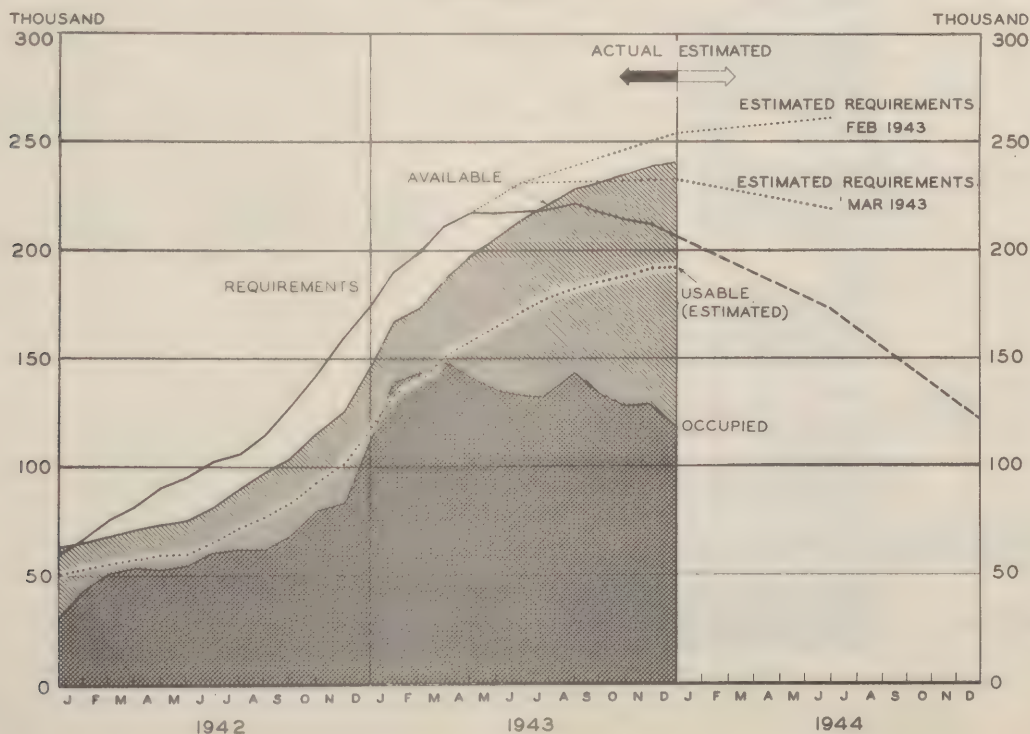
## UTILIZATION OF AND REQUIREMENTS FOR BEDS IN STATION HOSPITALS

The requirements for beds in station hospitals in the Continental U. S. are calculated on the basis of 4 percent of the strength of the troops to be stationed here, with an allowance for prisoners of war which adds 6,900 beds to the calculated requirement for 25 December. The requirements computed from present-day strength, however, differ materially from those which furnished the objectives early in 1943, when the construction-planning stage was virtually completed, as shown by the dotted requirement lines taken from HEALTH for February and March 1943. By the end of 1944, according to the most recent estimates, only 122,000 station hospital beds will be required.

In the face of the steady lowering of estimated requirements it is not surprising that there should now be an apparent surplus of about 35,000 beds with every prospect of a much larger increase. Housing and other station facilities present an entirely comparable problem. The original objectives having been approximately achieved it is essential to find alternative uses for some of the facilities already constructed. Recommendations have already been made for the conversion of about 32,000 station hospital beds to general hospital facilities. This, however, cannot provide a complete solution since hospitals having fewer than approximately 750 to 1,000 beds cannot be efficiently operated as general hospitals. Other plans are being studied, e. g. releasing certain facilities to the Veteran's Administration, and some hospitals will have to be closed. Measures are also being taken to close wards at the various posts where this is necessary to reduce bed capacity to four percent of strength. It is hoped that this will facilitate the reassignment of scarce personnel to numbered units and named general hospitals now being activated. Such realignment cannot be effectively accomplished unless the plans for various camps are known. Some thought should also be given to the possibility of a serious influenza epidemic following upon the mild epidemic of November and December.

The other lines show the total number of occupied beds, the number of available normal beds, and the estimated number of usable normal beds (80 percent of the number of available beds) to indicate average utilization without overcrowding. The curves for available and occupied beds exclude those reported from the several maneuver areas since they belong chiefly to numbered units. On this basis the number of normal beds available in station hospitals was 240,000, about the same as that reported for 27 November. However, the method of reporting is such that a considerable number of beds in wards which have already been closed continue to be reported as if they were available. The average number of beds occupied declined from 54 to 49 percent of normal beds available. At the peak of the noneffective rate, during the weeks ending 11 and 18 December, the percentages were 58 and 60.

REQUIRED AND AVAILABLE STATION HOSPITAL BEDS  
CONTINENTAL U. S.



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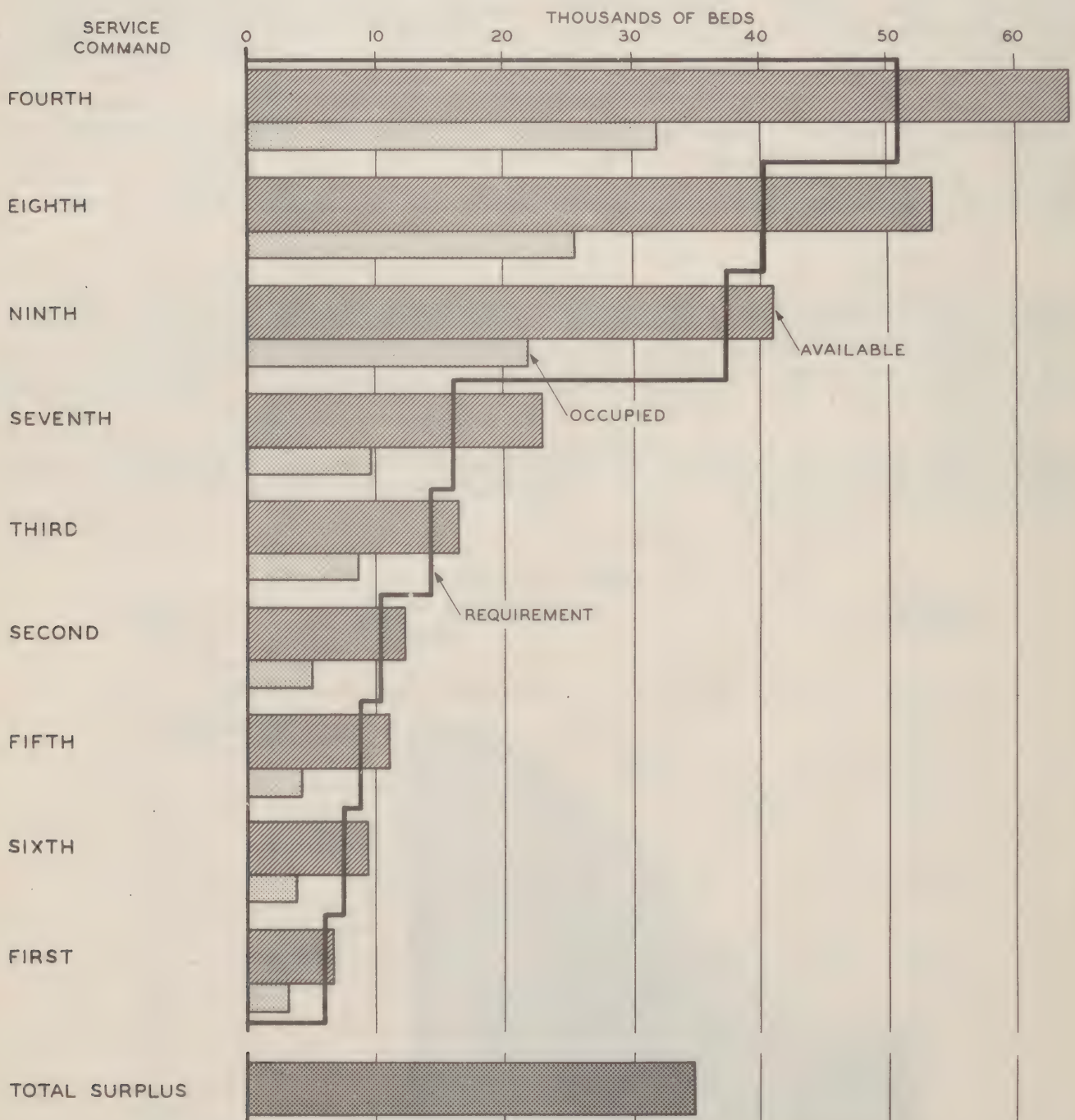


## HOSPITALIZATION

## STATION HOSPITAL FACILITIES, SERVICE COMMANDS

The following chart shows the relationship between required and available beds (both AAF and ASF) within the geographical limits of each service command, according to figures for 25 December 1943. The strengths used in computing requirements exclude the P.O.W. population. Both available and occupied beds in maneuver areas have been omitted also. The large excesses appear to be in the Fourth, Seventh, and Eighth Service Commands. The single bar at the bottom of the chart represents the total excess of about 35,000 beds. Both the Army Air Forces and the Army Service Forces have for some months planned measures to align station hospital facilities with declining strengths, but the utilization of hospital facilities depends largely upon the utilization of individual stations and their varied facilities.

REQUIRED AND AVAILABLE BEDS IN STATION HOSPITALS  
BY SERVICE COMMAND





HOSPITALIZATION

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STATION HOSPITALS, INDIVIDUAL STATIONS

Taken in relation to 4 percent of troop strength and the P. O. W. population in the U. S. there were approximately 35,000 surplus beds in station hospitals at the end of December. For each station of 5,000 or more average strength the number of normal beds available has been expressed as a percentage of the strength on 25 December. The results of this distribution are shown in the first panel below. This procedure ignores recent changes in strength, the fact that part of the strength of a station may be away on maneuvers, and the occasional need for hospitalizing the strength of other units or stations in adjacent areas. However, such discrepancies do not impair the general conclusion of the chart, that approximately 75 percent of the stations report more beds than 4 percent of strength would allow.

In order to ascertain how large the average surplus might be, and in what size of hospital, the individual stations having apparent surpluses were classified on these two characteristics as in the table below. For any such group, however, the entry of the table gives the percentage of the total surplus (among stations having surpluses) found in any particular size of hospital and size of surplus. For example, 22 percent of the surplus beds were found in hospitals having 1,500 to 2,249 beds and where the surplus ranged from 900 to 1,199 beds. The bottom chart gives the percentage of the surplus beds found among hospitals having a given number of surplus beds. Thus, 28 percent were found in hospitals where the surplus ranged from 900 to 1,199 beds.

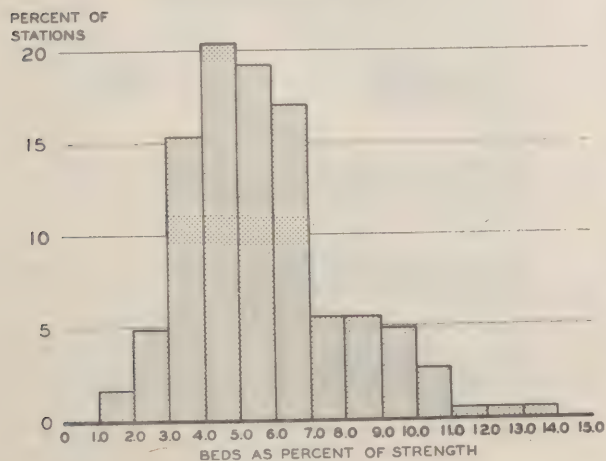
The data in the table and the charts may be taken as highly suggestive that a great deal of the apparent surplus is likely to be found in fairly large amounts in large stations rather than being widely scattered and inaccessible. This condition would seem to favor a program of conversion to general hospitals and of closing certain large stations.

Station hospital requirements for the U. S. as a whole are computed on the basis of total U. S. strength regardless of its location. A significant portion of the strength of the U. S. is not attached to the ordinary post, camp, or station and direct application of the results of the tabulation is not entirely justified. For example, it ignores maneuver areas etc., and actually deals with a total surplus which is higher than the 35,000 estimated for 25 December.

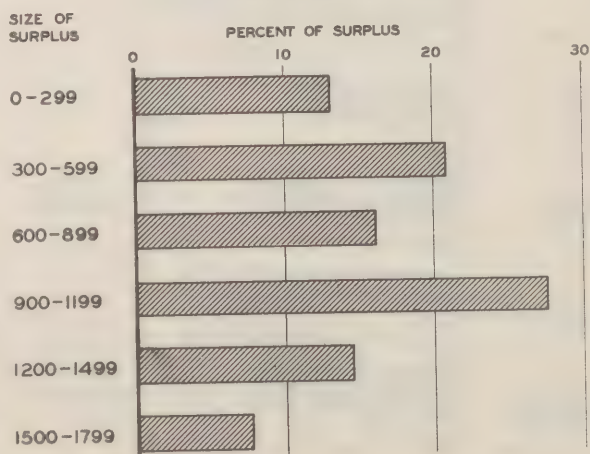
PERCENT OF SURPLUS BEDS AMONG 140 LARGE STATIONS CLASSIFIED  
BY SIZE OF HOSPITAL AND SIZE OF SURPLUS, 25 DECEMBER

Size of Hospital	Number of Surplus Beds							Total
	0-299	300-599	600-899	900-1199	1200-1499	1500-1799		
0 - 749	7.6	1.4					9.0	
750 - 1,499	5.3	9.4	3.5				18.2	
1500 - 2,249	0.3	10.1	12.6	22.1	6.3		51.4	
2250 - 2,999				5.5	2.1	5.0	12.6	
3000 - 3,749					6.1	2.7	8.8	
Total	13.2	20.9	16.1	27.6	14.5	7.7	100.0	

DISTRIBUTION OF STATIONS BY NORMAL  
BEDS AVAILABLE AS PERCENT OF STRENGTH  
25 DECEMBER 1943



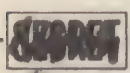
PERCENT OF SURPLUS BEDS IN HOSPITALS  
HAVING A GIVEN SURPLUS  
25 DECEMBER 1943



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# HOSPITALIZATION



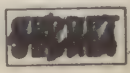
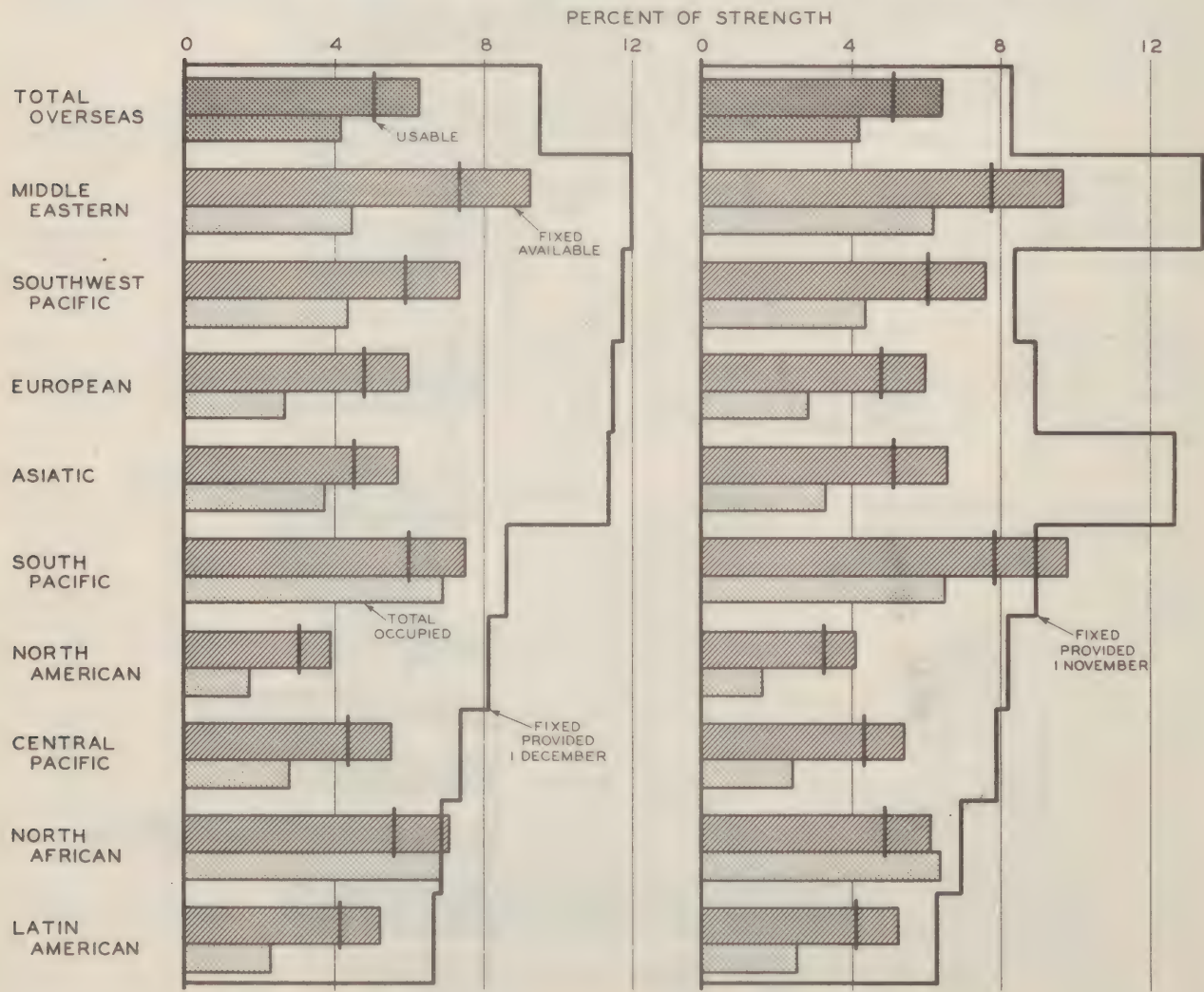
## HOSPITALIZATION OVERSEAS

The accompanying chart shows, for each theater, and as a percentage of U. S. Army strength there: (1) the number of fixed beds provided up to 1 December 1943; (2) the number of fixed beds reported as ready for use on 25 December 1943; and (3) the total number of patients hospitalized in the theater on the latter date. The second panel of the chart gives similar data for 27 November 1943, summarized in the last issue of *HEALTH*, because the occupancy figures shown there incorrectly excluded patients in mobile hospitals. This error distorted the picture for North Africa but not for other theaters. Patients in both mobile and fixed units are counted because it is essential that there be sufficient fixed beds to care for each patient requiring hospitalization.

The theaters are arranged according to the number of fixed beds provided as of 1 December, expressed in percentage terms. The crowding of facilities in North Africa seems especially serious in view of the fact that the beds reported as provided by 1 December were less than those available at the end of the month. There was also definite crowding of facilities in the South Pacific. It should be borne in mind, furthermore, that any particular fixed hospital will show signs of crowding when 80 percent of its beds are occupied, so that up to 20 percent of the fixed beds available should properly be discounted in planning. For this reason 80 percent lines have been drawn across the bars representing beds available.

The term "provided" is used to include facilities earmarked for shipment, in transit, and in storage in the theater, as well as those actually ready for use. It will be noted that the date of the "provided" count is several weeks earlier than the count of beds available.

FIXED BEDS AS PERCENT OF STRENGTH  
25 DECEMBER 1943                      27 NOVEMBER 1943





HOSPITALIZATION

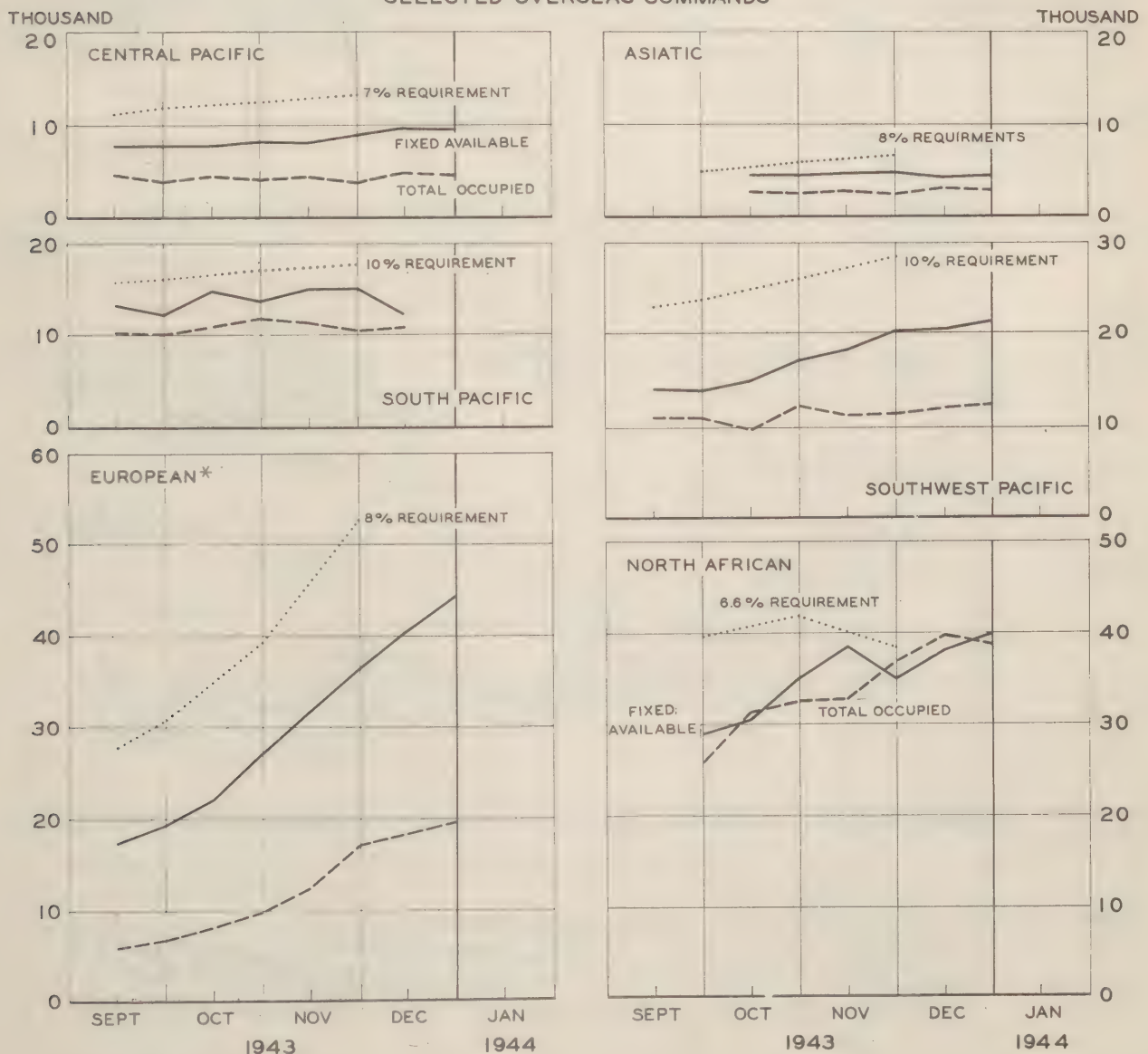
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HOSPITALIZATION OVERSEAS

In comparison with the five percent of strength now provided in the United States for station plus general hospitals, some overseas theaters require 10 percent or more in fixed beds alone (those in station, general, and field hospitals). Estimates of need must take into account not only combat activity but also the probable incidence of disease and nonbattle injury. In the Asiatic Theater special provision is made for hospitalization in support of certain Chinese units excluded from the strength.

The panels below give the recent changes in fixed hospitalization in some of the major theaters. The data are shown in absolute, not relative, form and each panel carries a strength factor of 6 to 10 percent, depending upon the current level of authorization for fixed bed units. Over and above the authorization for fixed bed units, use of expansion equipment is authorized to the extent of an additional 50 percent. However, the use of such facilities necessitates a degree of utilization of personnel not intended by tables of organization and must be regarded as an emergency measure. Crowding has been continuous in both North Africa and the South Pacific since September, when the present series starts. The data on available and occupied beds are drawn from telegraphic reports, those on strength from official AGO reports which are more complete than those of the telegraphic reports used on the preceding page.

BEDS REQUIRED IN FIXED UNITS, FIXED BEDS AVAILABLE  
AND TOTAL BEDS OCCUPIED  
SELECTED OVERSEAS COMMANDS



\* Iceland omitted from Sept. and Oct. points for beds available and occupied

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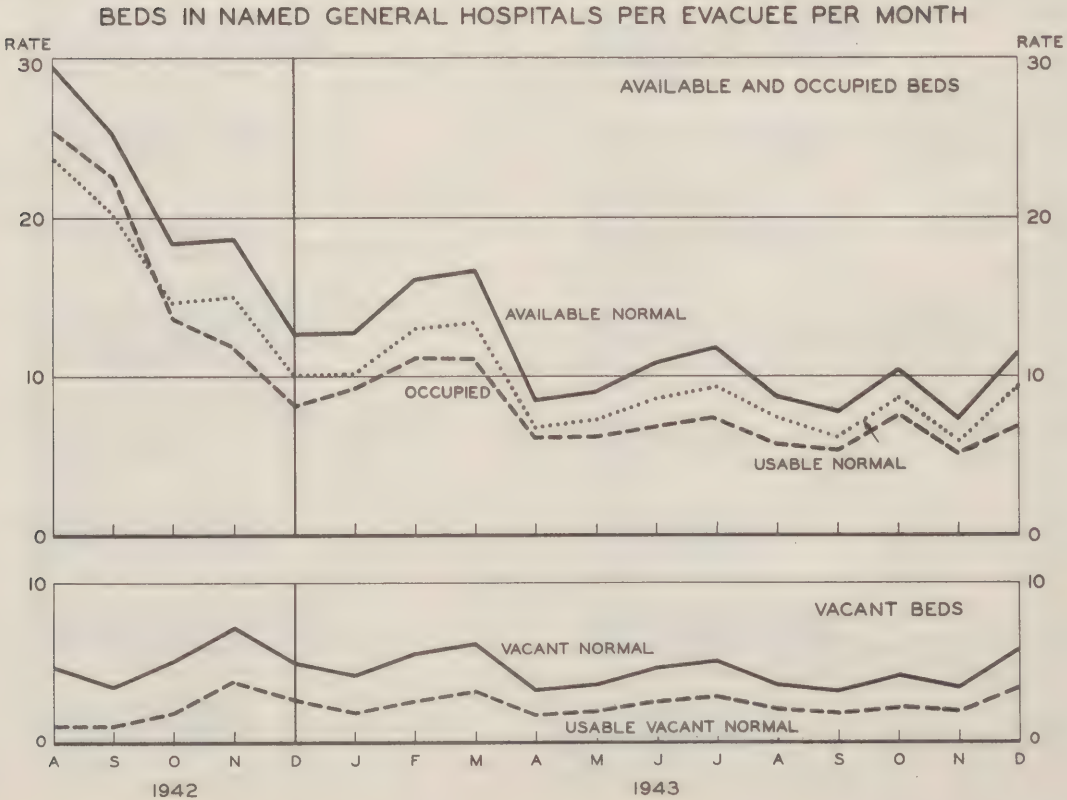
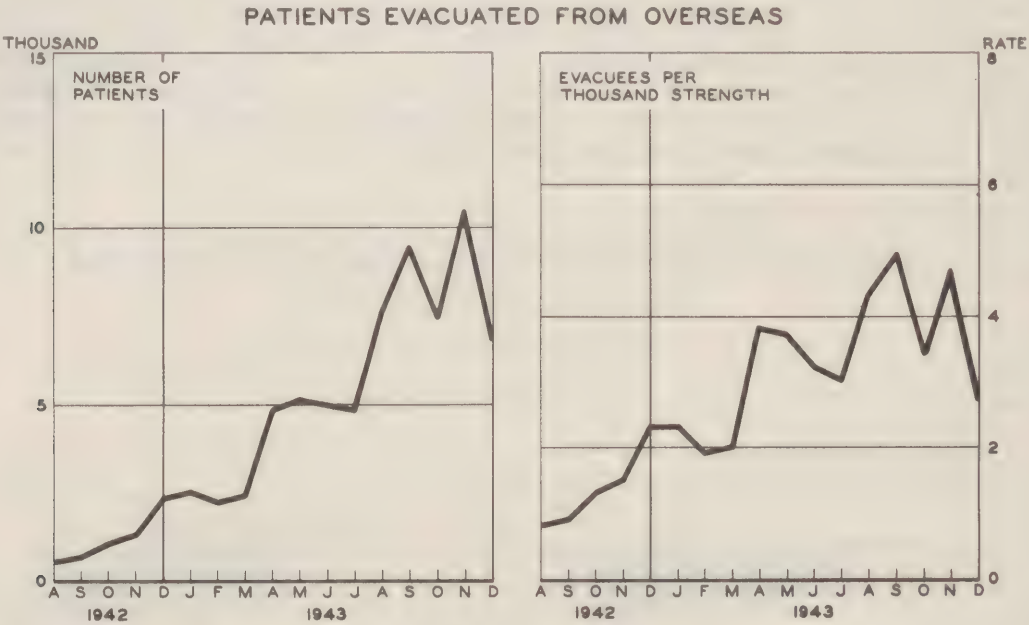


HOSPITALIZATION

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EVACUATION OF PATIENTS FROM OVERSEAS

During December the number of evacuees from overseas to the Zone of the Interior declined sharply from 10,500 for the previous month to an estimated 6,900, according to preliminary figures. In consequence, the rate of evacuation dropped to 2.8 patients per thousand strength overseas. The experience to date is shown below in both absolute and relative form. The lower set of panels shows the relationship between the number of evacuees received each month and the beds available in named general hospitals. Usable normal beds have been estimated at 80 percent of the normal beds available. Vacant usable (and normal) beds have been estimated by subtracting total beds occupied from the usable normal beds. Both the expansion of hospital facilities and the reduction in rate of evacuation operated to increase the number of beds available per evacuee.



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MORTALITY

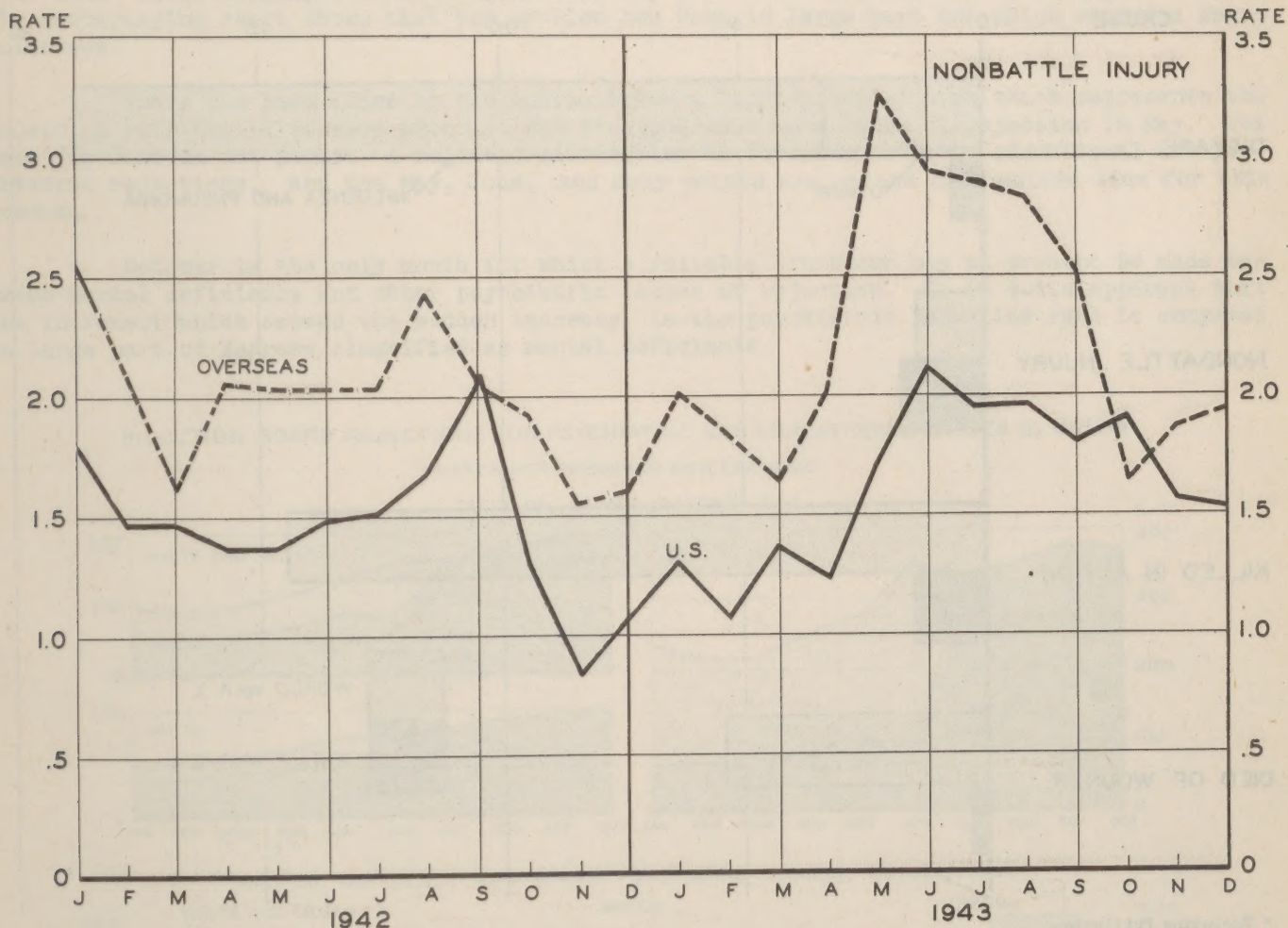
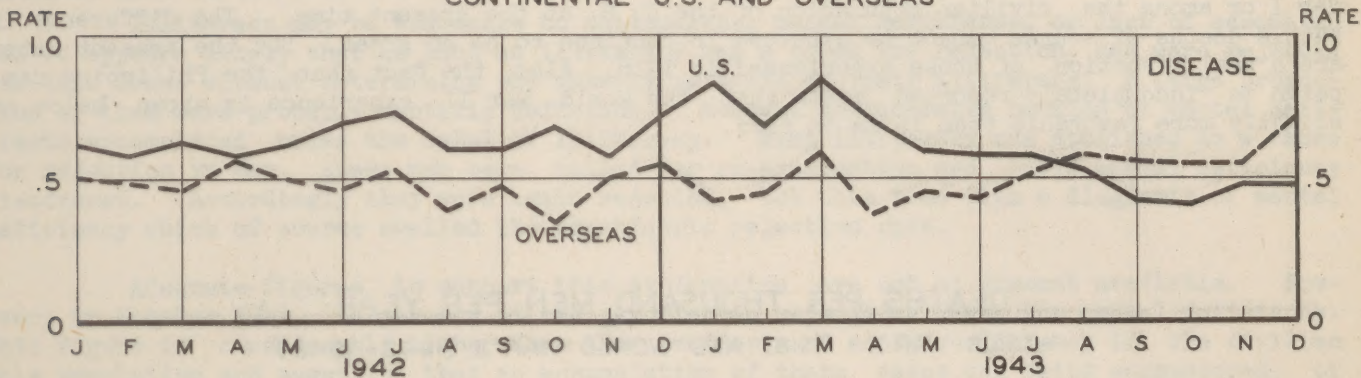
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MORTALITY FROM NONBATTLE CAUSES

The exceptionally low death rate from disease among troops in the Continental U. S. continued from November into December, but the rate for troops overseas continued its rise, according to preliminary telegraphic reports. There was no real change in the U. S. death rate from nonbattle injury, but the overseas rate advanced appreciably above its low point for October.

DEATHS PER THOUSAND MEN PER YEAR, NONBATTLE CAUSES

CONTINENTAL U.S. AND OVERSEAS





# MORTALITY

CONFIDENTIAL

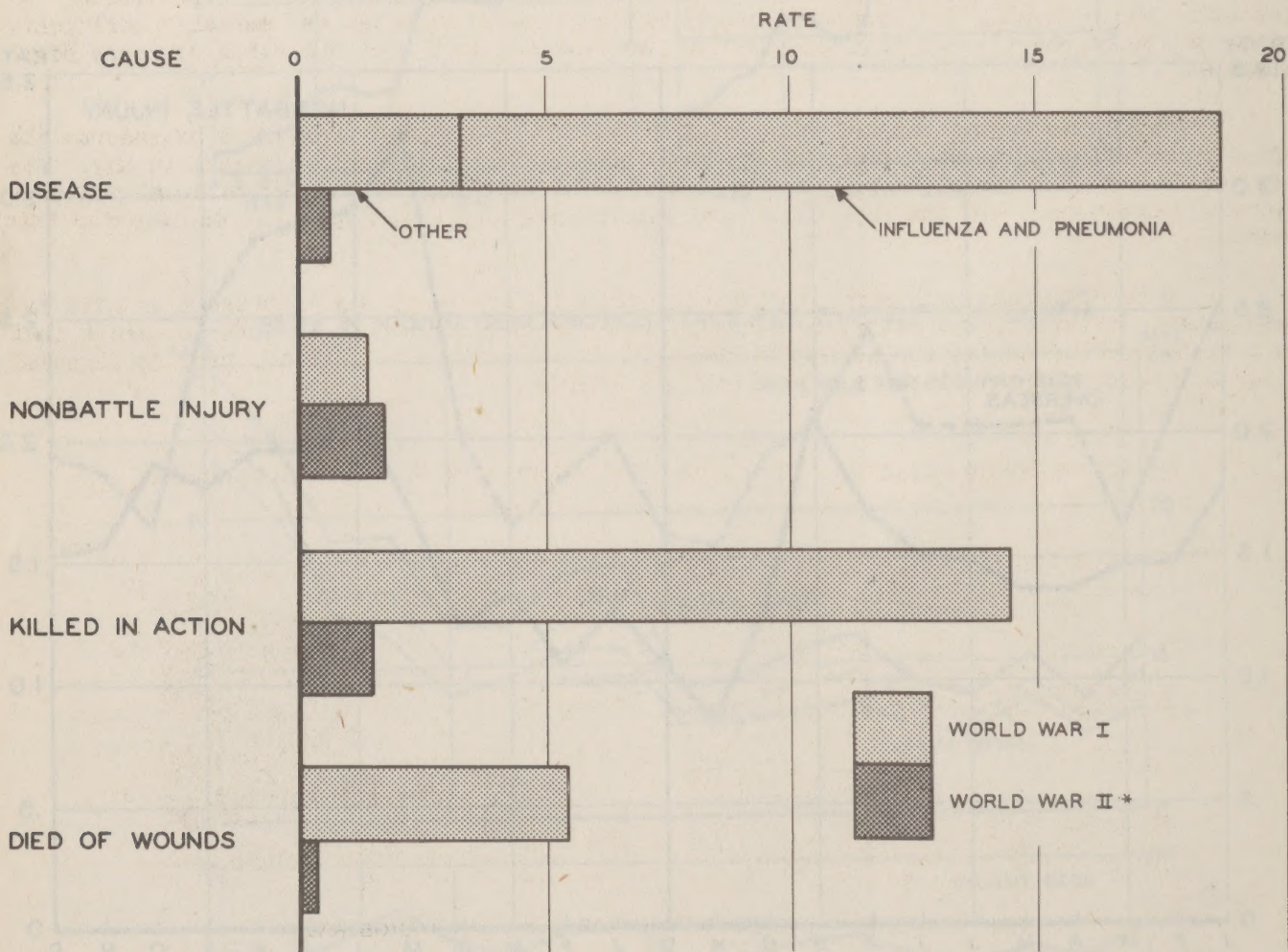
## CAUSES OF DEATH, WORLD WAR I AND II

Recent provisional tabulations of the mortality experience in World War II to date invite comparison with similar figures for World War I. The chart below gives the death rates from disease, nonbattle injury, and battle casualties for the two periods. The World War I experience is limited to 1918, the year of active participation in the conflict.

The outstanding difference between the two wars centers upon the death rate from disease. Exclusion of the World War I rate for influenza and pneumonia brings the two rates more closely together, but it is plain that the present military experience, like the civilian experience, is much the more favorable. The civilian death rate from disease among males of comparable age and color is roughly 1.8, according to mortality tables for 1940-1941, about three times the rate for the Army.

Death rates from nonbattle injury are somewhat higher in World War II than in World War I or among the civilian population of the U. S. at the present time. The difference in battle deaths of course cannot be expected to continue to be so great, but the present rates are a small fraction of those experienced in 1918. Also, the fact that the Philippine campaign is incompletely reported means that the World War II experience is shown below as slightly more favorable than it is in fact.

DEATHS PER THOUSAND MEN PER YEAR  
WORLD WAR I (1918) AND WORLD WAR II (1942-1943)



\* Excluding Philippines

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# MISCELLANEOUS

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## TREND OF PSYCHIATRIC REJECTION RATE

From January through May 1943, the rate at which men were rejected at induction centers for psychiatric reasons gradually rose from 60 to 85 per thousand men examined. The rate for June is somewhat uncertain but by July the rate had abruptly risen to almost double its previous value. Thereafter it continued to rise slowly and in October 19 men were being rejected per 100 men examined. Although several directives were issued during the spring and early summer of 1943 which increased the strictness with which psychiatric criteria for acceptness were to be interpreted, they hardly explain the sharp increase in rejection rates which appears to have occurred in June and July. A more probable explanation lies in the fact that illiteracy was abolished as a cause for rejection in May. Men previously rejected for illiteracy began to be examined in June and July and it seems probable that a large number of these men were rejected again but this time for mental deficiency, which had the effect of increasing the psychiatric rejection rate.

Illiteracy may be traceable to nationality, mental deficiency, or lack of education and it appears likely that as long as illiteracy was a cause for rejection, men were rejected for this cause without determining the underlying basis of their illiteracy. A large proportion of them were probably mentally deficient. Hence a considerable backlog of mental deficiencies accumulated under the label of illiteracy. When illiteracy was abolished as a cause for rejection in May, these men were called for re-examination and their mental deficiency discovered. Accordingly they were again rejected, but this time with a diagnosis of mental deficiency which of course swelled the psychiatric rejection rate.

Adequate figures to support this explanation are not at present available. However, in October 1943, 44 percent of the psychiatric rejections were for mental deficiency. This figure is considerably higher than the incidence of mental deficiency in the civilian male population and suggests that an accumulation of these cases was being encountered, or that some educationally deficient selectees may have been rejected as mentally deficient. The accompanying chart shows that the problem has been in large part one which concerns Negro selectees.

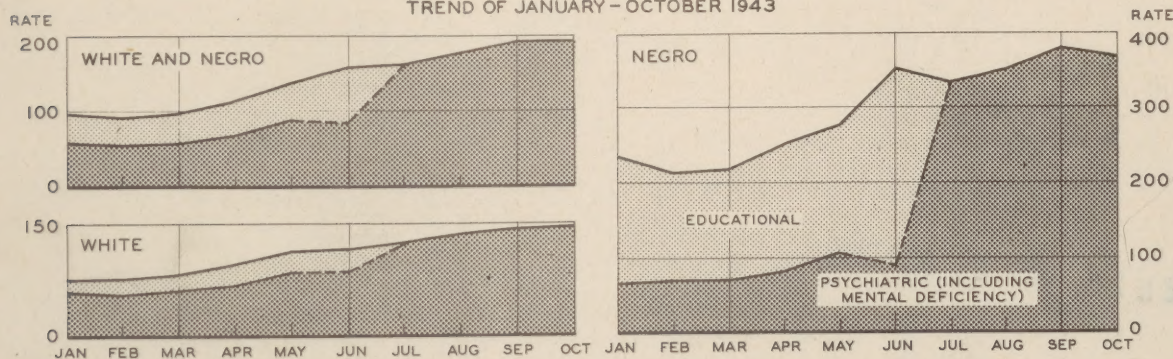
There has been added to the charts below a lightly shaded area which represents the rejection rate for illiteracy prior to its disappearance as a cause of rejection in May. The data for June do not permit a reliable distinction to be drawn between educational and psychiatric rejections, and the May, June, and July points are joined by a dotted line for this reason.

October is the only month for which a reliable breakdown may at present be made between mental deficiency and other psychiatric causes of rejection. It is quite apparent that the increment which caused the sudden increase in the psychiatric rejection rate is composed in large part of Negroes classified as mental deficient.

## INDUCTION BOARD REJECTIONS FOR PSYCHIATRIC AND EDUCATIONAL CAUSES BY COLOR

RATES PER THOUSAND MEN EXAMINED

TREND OF JANUARY - OCTOBER 1943



## MENTAL DEFICIENCY AND OTHER PSYCHIATRIC CAUSES, OCTOBER 1943

